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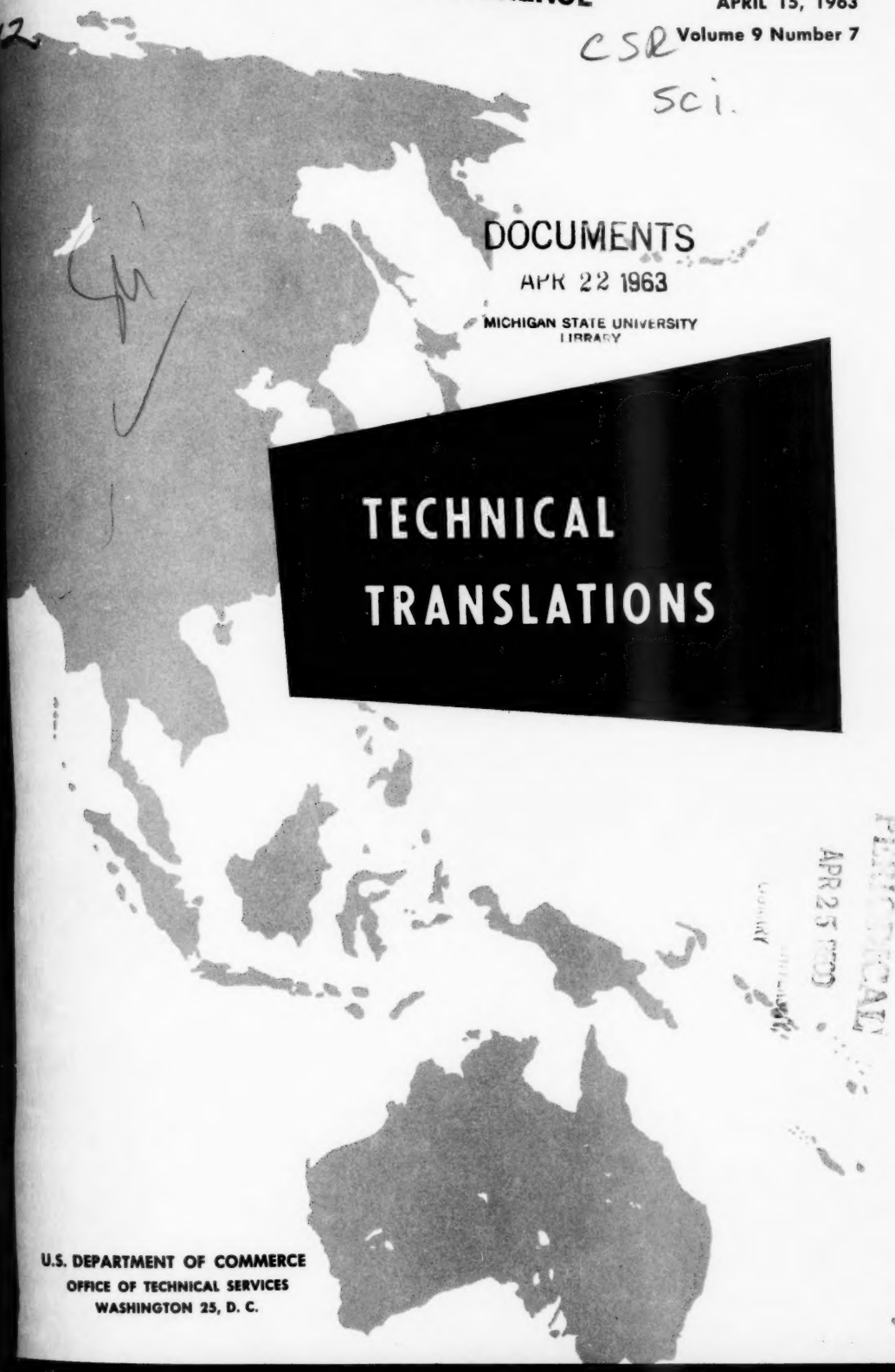

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U.S. DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, *Secretary*

OFFICE OF TECHNICAL SERVICES
John C. Green, *Director*

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TECHNICAL TRANSLATIONS

Volume 9, Number 7 Pages 673 - 778 April 15, 1963

*Descriptors marked with an asterik are listed in the subject index.

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Order from OTS or SLA $1.60 63-15369

Consists of abstracts from the scientific and technical journals of Rumania.

DESCRIPTORS: *Abstracts, Bibliography, *Animals, *Arthropods, *Plants, *Ecology, Morphology, Classification, Physiology, *Geology, Astronomy.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 70 (GENERAL SERIES). 5 Feb 63 [21]p. JPRS: 17472.
Order from OTS $0.50 63-21054

Abstract trans. of Nauka Polska, 1962, v. 10, no. 4(40) p. 1-41, 43-59, 61-87, 89-119, 121-155, 157-175, 177-208.

DESCRIPTORS: *Abstracts, Bibliography, Scientific research, *Oceanography, Scientific personnel, *Social sciences, History, Scientific organizations, Conferences, Education.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 72 (GENERAL SERIES). 6 Feb 63 [23]p. JPRS: 17508.
Order from OTS $0.75 63-21065

Consists of abstracts of articles from the scientific and technical journals of East Germany and Hungary.

DESCRIPTORS: *Abstracts, Bibliography, *Mathematics, Oceanography, *Chemistry, Physical chemistry, Organic compounds, Inorganic substances, Biochemistry, *Geology, Paleoecology, *Semiconductors, Spectroscopy, Pest control, Relativity theory, *East Germany, *Hungary.

AGRICULTURE

AGRICULTURAL PLANNING. 28 Jan 63 [24]p.
JPRS: 17331.
Order from OTS $0.75 63-21003

Trans. of Voprosy Ekonomiki (USSR) 1962, no. 9, p. 127-133 and 151-155.

DESCRIPTORS: *Agriculture, *Management engineering, Economic conditions, *Fertilizers.

Contents:
Planning of agricultural regions, by M. Gendel'man and M. Spektor
Economic bases of rational utilization of fertilizer, by Z. Kanskaya.

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 54.
5 Feb 63 [29]p. JPRS: 17467.
Order from OTS $0.75 63-21049

Trans. of Traktory i Sel'khozmashiny (USSR) 1962 [v. 32] no. 11, p. 1-2, 33-36, 38-43.

DESCRIPTORS: *Agricultural machinery, *Tractors, Production, Automation, Manufacturing methods, Economics, Transportation, Storage, Agriculture.

Contents:
Towards new production successes
Single-bottom bush and bog plow, by P. M. Gil'shtein and D. Z. Starodinskii
The universal MDU-3 thresher-grinder, by E. A. Klimov
The PT-40 three-bottom plow, by Yu. I. Kuznetsov
KUT-3.0 feed distributor, by M. A. Makarov
Mechanization and automation in the production of SMD-14 engines at the serp I Molot plant, by V. F. Krivokobyl'skii and L. M. Karas'
Means of reducing costs through an improved organization of transportation and storage operations, by L. D. Karpov.

Boczek, J., Golebiowska, Z., and Krzeczkowski, K.
MITES WHICH CAUSE DAMAGE IN LINSEED AND HEMPSEED STORAGES IN POLAND (Roztocze Szkodliwe w Przechowalniach Siemienia Inianego i Konopi w Polsce) tr. by Maria Radziweill. 1962 [28]p. 20 refs. PL-480 Agr.
Order from OTS $0.50 60-21533

Trans. of Instytut Ochrony Roslin, Poznan. Prace Naukowe (Poland) 1960, v. 2, no. 1, p. 57-86.

DESCRIPTORS: *Seeds, Plants, *Storage, Mites, *Insects. Pest control.

Gel'fenbein, S. P.
STUDY OF AUTOMATIC DRIVING SYSTEMS BY SIMULATION. 7 Feb 63 [14]p. 7 refs. JPRS: 17525.
Order from OTS $0.50 63-21073

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1962 [v. 7] no. 11, p. 105-110.

DESCRIPTORS: *Agricultural machinery, *Tractors, *Automation, Control systems, Linear systems, Nonlinear systems, *Analog computers, Models (Simulations).

Mathematical modeling with the use of analog machines makes possible in a comparatively simple way to study systems of automatic driving with a zone of nonsensitivity and delay. In this case, it is easy to vary the parameters of individual elements of the system, to determine the effect of these changes on the quality of operation of the system as a whole, and to determine the zone of optimum value of parameters. Mathematical modeling has made it possible to establish the optimum place to locate the copying device (it can be inscribed in the dimensions of the tractor without jutting out too far forward); the amplification coefficient of the copying device (length of distortion of the copying feeler); the best scheme of connnecting the tractor with a plow (single point flexible-joint connecting); and the optimum place to connect the plow to the tractor (in the field of momentary pole of turn of the tractor). Also, there is the fact that the increase of the amplification coefficient of the tractor, i.e., the physical increase in speed, the deviation of the unit decreases, which can be explained by the increase in sensitivity of the system as a whole. A comparison of a nonlinear system of automatic driving with a nonsensitive zone and delays with a linear system shows that the latter variant can provide automatic driving without copying error. (Author)

Larin, I. V.
PASTURE ECONOMY AND MEADOW CULTIVATION, tr. by A. Lapid. 1962, 641p. 281 refs. PL-480 Agr.
Order from OTS $6.50 61-31195

Trans. of mono. Lugovodstvo i Pastbishchnoe Khozyaistvo, Moscow/Leningrad, 1956 [544p.].

DESCRIPTORS: *Agriculture, *Soils, Economics, *Plants, *Grasses, *Food, *Cattle, Biology, Ecology, Geography, Classification, Water supplies, *Fertility, Growth, Forestry, *Swamps.

General information is given in this textbook on the biology and ecology of forage plants (Chapter I), which is essential for the understanding of the other chapters of this course. Fodder crops, poisonous, and noxious plants are described (Chapter II). A clear picture of fodder characteristics in the different natural zones of the USSR and of the types of natural pastures (Chapter III) will greatly help in organizing to the best advantage the pasture resources of the given territory. In the subsequent two chapters of the text (IV and V) methods are described for the improvement of natural pasture land and for the establishment of sown pastures and hay meadows. Chapter VI is devoted to the most efficient use of pastures and to the organization of the areas under grass. Not only are theoretical and practical principles of pasture economy presented in this chapter of the text, but also the features of pasture utilization according to the natural zones in the USSR and according to different types of livestock. Considerable attention is also given in the text to haymaking (Chapter VII), since abundant feed for livestock during the winter depends on the timely harvesting of the hay.

Lovens, Ivan and Wilmotte, Joseph.
IMPROVEMENTS MADE ON MILKING MACHINES. [1962] [5]p.
Order from OTS or SLA $1.10 62-18653

Trans. of French patent 464,999, 4 Apr 14, appl. 17 Nov 13, delivered 26 Jan 14.

DESCRIPTORS: Agricultural machinery, *Milking machines.

Lovens, Ivan and Wilmotte, Joseph.
IMPROVEMENTS MADE ON MILKING MACHINES. [1962] [8]p.
Order from OTS or SLA $1.10 62-18731

Trans. of French first addition patent 22,956 to patent 464,999, appl. 10 Apr 20, delivered 28 Mar 21, pub. 19 Sep 21 (main patent [appl.] 17 Nov 13).

DESCRIPTORS: Agricultural machinery, *Milking machines.

See also 62-18653

Tsitsin, N. V., ed.
WIDE HYBRIDIZATION OF PLANTS. Proceedings of the Conference on Wide Hybridization of Plants and Animals, Moscow, 5-8 Feb 58. 1962, 364p.
PL-480 Agr.
Order from OTS $3.75 61-31214

Trans. of mono. Otdalennaya Gibridizatsiya Rastenii, Moscow, 1960.

DESCRIPTORS: *Botany, *Plants, *Mutations, *Genetics, *Animals, *Trees, *Fruits, *Vegetables, History, *Wheat, *Proteins, *Immunology, Diseases, *Grasses, *Fertility, *Embryology, Embryos, Reproduction, *Culture media, Rye, *Cereals, Agriculture, Geography, Tomatoes, *Cotton, Fibers, Potatoes, *Rusts, Tobacco, Beets.

Contents:
The significance of wide hybridization in the evolution and production of new species and forms of plants and animals, by N. V. Tsitsin
Hybridization in tree and soft-fruit crops, by I. S. Gorshkov
Hybridization in vegetable breeding, by D. D. Brezhnev
Wide hybridization in silviculture and greenbelt work: Survey and prospects, by A. S. Yablokov
Notes on the history of wide hybridization, by D. V. Goryunov
Wide hybridization as a method of studying origin and improvement through breeding of fruit-crop plants illustrated by the plum Prunus Domestica L., by V. A. Rybin
Breeding strong high-protein wheats, by V. E. Pisarev
The production of immune cultivated plants by wide hybridization, by K. T. Sukhorukov
The production of disease-resistant wheat varieties by wide hybridization, by E. D. Yakimovich
Spontaneous intergeneric grass hybrids in the Pamirs, by I. A. Raikova
Problems of sterility and decreased fertility in hybrid plants, by V. F. Lyubimova
Embryology of the hybrids of some angiosperm plants, by V. A. Poddubnaya-Arnol'di.
The method of raising embryos on an artificial nutrient medium, and its application to wide hybridization, by E. V. Ivanovskaya
The theory and practice of producing perennial rye varieties, by A. I. Derzhavin
Hybridization between wheat, perennial rye and agropyron, by A. I. Derzhavin
Three-genus hybrids in the grass family, by G. D. Lapchenko
Wheat-agropyron hybrids in Kazakhstan, by A. S. Artemova and A. V. Yakovlev
The breeding of squarehead wheat-agropyron hybrids, by F. D. Kryzhanovskii
Grain-forage wheat-agropyron hybrids, by V. N. Bylov and M. A. Makhalin
Preliminary results of the study of spring wheat-agropyron hybrids, by S. A. Zhigalov
Wheat-agropyron hybrids of the Saratov Agricultural Institute, by Ya. A. Shnaiderman
Hybridization as one of the basic means of enriching and renewing the pool of Georgian wheat species, by V. L. Menabde and A. A. Eritsyan
The use of interspecific hybridization in the creation of a spring wheat variety, by P. V. Kuchumov
Interspecific wheat hybrids and the creation of winter durum wheat, by A. F. Shulyndin
Hybridization between wheat and elymus, by K. A. Petrova
Hybridization between wheat and elymus, by M. S. Bodrov
Wide hybridization in the genus Hordeum L., by F. Kh. Bakhteev and E. M. Darevskaya
Wide hybrids in the grass family, by S. A. Lysak
The importance of interspecific hybridization in the production of spring wheat varieties for the Southeast, by V. N. Mamontova and N. N. Kulikov
A highly productive sorghum x sudan grass hybrid, by P. V. Kuchumov
Hybridization of sorghum species, by S. K. Kadamov
Wide hybridization in alfalfa and other leguminous perennial forage grasses, by E. N. Sinskaya
Wide hybridization in the evolution of the cotton plant, by F. M. Mauer
Breeding cotton with naturally colored fiber by wide hybridization, by I. K. Maksimenko
Wide hybridization in the Malvaceae, by K. A. Vysotskii
Methods of wide hybridization in potato breeding, by S. M. Bukasov
Interspecific rust-resistant sunflower hybrids, by V. S. Pustovoit
Hybrids between jerusalem artichoke and sunflower, by I. I. Marchenko
Summary and prospects of interspecific hybridization in the genus Nicotiana, by M. F. Ternovskii
Results of wide hybridization in beet, by V. P. Zosimovich
Wide hybridization in the genus Lycopersicon Tourn., by D. D. Brezhnev
Interspecific hybridization of watermelons, by M. K. Gol'dgauzen.

Animal Husbandry

CONFERENCES ON SOVIET VETERINARIANS.
7 Feb 63 [38]p. JPRS: 17519.
Order from OTS $1.00 63-21070

Trans. of Veterinariya (USSR) 1962 [v. 39] no. 10, p. 92-96; and from Sovetskaya Belorussiya (USSR) 1962, 19 Sep, p. 2.

DESCRIPTORS: Conferences, *Veterinary medicine, Scientific research, Theses, *Antibiotics, Animals, Epidemiology.

Contents:
Coordination Conference of Specialists of Veterinary Scientific Research Institutes of Countries of the Socialist Camp (no. 2) by A. N. Kas'yanov
Conference on Problems in the Fight Against Ixodes ticks, by A. Burdov
Seminar of Workers Producing Antibiotics for Animals, by V. M. Podopaev
Seminar of Epizootologists, by B. S.
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CONCERNING THE 60TH ANNIVERSARY OF THE CENTRAL VETERINARY INSTITUTE OF INFECTIOUS AND PARASITIC DISEASES (K Shestidesyatiletiyu Tsentral'nogo Veterinarnogo Instituta Zaraznykh i Parazitarnykh Boleznei). 1 Oct 62, 4p. Trans. V-1796.
Order from OTS or SLA $1.10 62-33556

Trans. of Veterinariya (USSR) 1962, v. 39, no. 1, p. 86-87.

DESCRIPTORS: *Veterinary medicine, Conferences, Communicable diseases, Parasitic infections, Animals.

Kovalenke, Ya. R., and Ershov, V. S.
SESSION DEDICATED TO THE 60TH. ANNIVERSARY OF THE BULGARIAN CENTRAL VETERINARY INSTI TUTE OF INFECTIOUS AND PARASITIC DISEASES (Sessiya, Posvyashchennaya 60-Letiyu Bolgarskogo Tsentral'nogo Veterinarnogo Instituta Zaraznykh i Parazitarnykh Boleznei). 26 Sep 62, 3p. Trans-V-1797.
Order from OTS or SLA $1.10 62-33557

Trans. of Veterinariya (USSR) 1962, v. 39, no. 1, p. 88.

DESCRIPTORS: *Veterinary medicine, Conferences, Communicable diseases, Parasitic infections, Animals.

Kudryavtsev, A. A. and Vertunov, A. I.
APPLICATIONS OF RADIOISOTOPES IN ANIMAL HUSBANDRY AND VETERINARY SCIENCE (Primenenie Radioizotopov v Zhivotnovodstve i Veterinarii). [1962] [20]p. 64 refs.
Order from OTS or SLA $1.60 AEC-tr-5034

Trans. of mono. Konferentsiya po Ispol'zovaniyu Radioizotopov v Biologii Zhivotnykh i v Meditsinskikh Naukakh (Conference on the Use of Radioisotopes in Animal Biology and in the Medical Sciences) Mexico City, 21-Nov-1 Dec 61. [Proceedings].

DESCRIPTORS: Radiobiology, *Animals, Agriculture, *Veterinary medicine, *Radioactive isotopes, Labeled substances, Physiology, Genetics.

Shubin, V. A.
PATHOLOGICAL CHANGES IN THE ORGANISM OF CATTLE CAUSED BY MALIGNANT FOOT-AND-MOUTH DISEASE (Patologicheskie Izmeneniya v Organizme Krupnogo Rogatogo Skota, Perebolevshego Zlokachestvennym Yashchurom). 11 Oct 62, 5p. (figs. omitted) 4 refs. Trans. V-1801.
Order from OTS or SLA $1.10 62-33558

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1961, v. 25, p. 103-108.

DESCRIPTORS: Pathology, *Foot-and-mouth disease, *Cattle, *Muscular atrophy, Heart, Nerves, Ganglia, Endocrine glands, Nervous system, Veterinary medicine.

Clinical disorders, observed in animals, which recovered from the malignant FMD, cannot be explained only by residual changes of the myocardium, since they were comparatively weakly expressed. They were also conditioned by steady residual changes in the ganglia of the vegetative nervous system, of the endocrine glands and the mammary gland. The reduced productivity can be explained by the residual pathology, and in connection with this the unprofitableness in the upkeep of animals that recovered from the malignant FMD. (Author)

Plant Cultivation

COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY TRANSLATIONS NO. 17. 18 Jan 63 [16]p. JPRS: 17197
Order from OTS or SLA $1.60 63-15398

Trans. of [T'u Jang Hsüeh Pao] (Chinese People's Republic) 1961 [v. 9] no. 9, p. 13-16.

DESCRIPTORS: *Soils, *Fertilizers, *Phosphorus, Effectiveness, China.

Contents:
The application of phosphorus fertilizer on calcareous soil of Kiangsu Province, by Liu Kuang-sung and Chou Wei-chin
Authors and organizations.

Chudnovskii, A. F.
HEAT TRANSFER IN THE SOIL, tr. by S. Monson. 1962, 164p. 179 refs. PL-480 Agr.
Order from OTS $1.75 61-31215

Trans. of mono. Fizika Teploobmena v Pochve, Leningrad/Moscow, 1948 [220p.].

DESCRIPTORS: *Soils, *Heat transfer, Geophysics.

Contents:
The fundamental problem of soil energetics and methods for its solution
Heat transfer in soil: Its role in the total heat balance and significance in geophysical and agrophysical problems
Methods for the study of the soil heat regime
Fundamental characteristics of the soil thermal regime
Theory of heat transport in the upper layers of the soil
Practical applications

Henkel', P. A. and Tsvetkova, I. V.
METHODS: APPLICATION OF GRAVEL CULTURES FOR A STUDY OF SOIL AND ATMOSPHERIC DROUGHT (Metodika. Primenenie Graviinykh Kul'tur pri Izuchenii Pochvennoi i Atmosfernoi Zasukhi) tr. by Anton Neal. [1962] [14]p. 9 refs. [CSIRO Trans.] no. 5826.
Order from OTS or SLA $1.60 62-25645

Trans. of Fiziologiya Rastenii (USSR) 1960, v. 7, no. 5, p. 610-614.

DESCRIPTORS: Rock, Sand, *Soil, Atmosphere, *Water, *Dehydration, Wind, *Plants, Nutritions, Pressure.

A simple modification of the hydroponics method for physiological investigation of the effect of soil and atmospheric water deficiency on plants is proposed. The effect of soil drought on pre-sowing drought hardening is shown. Unhardened plants lost their turgor whereas the hardened ones retained it. The after-effect of a two-fold air drought on the yield of control and hardened plants is shown

Krasil'nikov, N. A.
THE ABSORPTION OF NATURALLY RADIOACTIVE ELEMENTS BY SOIL MICROORGANISMS (Pogloshchenie Estestvenno-Radioaktivnykh Elementov Pochvennymi Mikroorganizmami). 22 May 62 4p. (4 figs. omitted). NIH no. 6-16-62.
Order from OTS or SLA $1.10 62-25663

Trans. of Priroda (USSR) 1958, v. 47, no. 9, p. 97-99.

DESCRIPTORS: Absorption, *Radioactivity, Chemical elements, *Soils, *Microorganisms, Plants, Growth, Energy, Bacteria, Actinomycetes, Natural radioactivity.

Experiments show that in small concentrations the naturally radioactive substances (NRS) are not only not harmful but even necessary. They increase the vital processes in the cells, the growth of the plants increases, the harvest is raised, etc. There is reason to suppose that the soil microorganisms use the NRS as sources of energy for definite biochemical processes. (Extracted)

Leer, R. van and Dory, J.
PRODUCTION OF WRAPPER TOBACCO AT LOMAMI. [1962] 11p.
Order from K-H $13.75 K-H 3084 e

Trans. Bulletin Agricole du Congo Belge, 1952, v. 43, p. 999-1009.

DESCRIPTORS: Production, *Tobacco, Agriculture.

Strogonov, B. P. and Ivanitskaya, E. F.
EFFECT OF SOIL SALINITY ON THE STABILITY OF THE CHLOROPHYLI-CHLOROPLAST PROTEINS LINK IN COTTON (Vliyanie Pochvennogo Zasoleniya na Prochnost' Svyazi Khlorofilla s Belkami Khloroplastov u Khlopchatnika) tr. by M. Slade. [1962] [9]p. (foreign text included) 8 refs. [CSIRO] Trans. no. 5471.
Order from OTS or SLA $1.10 62-25644

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 98, no. 3, p. 497-499.

DESCRIPTORS: *Soil, *Salinity, Chlorophylls, Proteins, *Cotton, Dehydration, Plants, Injuries.

Salt additions to the plants in a cotton field had a mass effect, but this effect was not uniform; it was concentrated in discrete portions of the field, and in the individual rows injured plants alternated with plants that were not injured. Quite often a single group contained a poisoned plant and a healthy plant. Special investigations showed that a peculiar selection of cotton plants best adapted to tolerate salinity had taken place. In cotton that grew with a high salt content of the soil and with concentration of salts in the leaves the extractability of the pigment from the chloroplasts was considerably less. Chlorophyll became less extractable when chlorides predominated in the soil or were concentrated in the leaves. Results suggest that adaptation of cotton to salinized soil is accompanied by a qualitative change in the protein complex of the chloroplasts. These changes increase the stability of the chlorophyll-protein system in the presence of salts and ensure the requisite intensity of photosynthesis by the cotton plants under conditions of soil salinization.

Swiniarski, E., Werner, E., and Mierzwa, Z.
BIOCHEMICAL RESISTIVITY OF WILD POTATO SPECIES TO COLORADO BEETLE LARVAE (LEPTINOTARSA DECEMLINEATA SAY) (Pewne Zagadnienia Biochemicznej Odpornosci Dzikich Gatunkow Ziemniaka na Larwy Stonki Ziemniaczanej (Leptinotarsa Decemlineata Say)) tr. by D. Lachert. 1962 [11]p. 12 refs. PL-480 Agr.
Order from OTS $0.50 61-31282

Trans. of Hodowla Roslin, Aklimatyzacja i Nasiennictwo (Poland) 1958, v. 2, no. 5, p. 623-631.

DESCRIPTORS: *Parasites, Plants, *Potatoes, Resistance, *Beetles, Genetics.

Yastrebov, M. T.
NATURAL RADIOACTIVITY IN THE ZONAL SOILS OF THE EUROPEAN PORTION OF THE USSR (Estestvennaya Radioaktivnost' Zonal'nykh Pcch Evropeiskoi Chasti SSSR). 22 May 62 [22]p. 50 refs. NIH no. 6-3-62.
Order from OTS or SLA $2.60 62-25664

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1959 [v. 24] no. 3, p. 391-402.

DESCRIPTORS: *Natural radioactivity, *Soils, Moisture, Solar energy, Fertility, Growth, Plants, Physiology, Rock.

It was found that natural radioactivity of zonal soils increased in the following order: highly podzol on carbonate moraine (Arkhangelsk region), sod-highly podzol soil on loess-like loam (Vologodsk region), sod-medium podzol soil on loess-like loam (Moscow region), light-gray forest soil on loess loam (Tula region), powerful leached chernozem on loess-like loam (Kursh region), dark chestnut on carbonate loess-like loam (Kherson region) brown forest on slate schists (Crimea region). A 5 mm superficial layer of the accumulative A_1 horizon invariably showed maximal natural radioactivity in all kinds of soil surpassing the natural radioactivity value of the lower A_1 horizon and of all soil horizons and rocks by 2.2-3.5 times. In the podzol A_2 horizons a decrease of natural radioactivity was mostly noted as compared with the natural radioactivity value of the accumulative A_1 horizon. In the illuvial horizon (B_1 and B_2) natural radioactivity increases by 12-33% when compared with natural radioactivity of the A_1 horizon. Most of the soil forming rocks tested showed a lesser natural radioactivity (by 33-50%) than natural radioactivity of the accumulative (A_1) and illuvial (B_1 and B_2) soil horizons which have developed on these rocks. (Author)

ASTRONOMY

Astrophysics

Astavin-Razumin, D. L.
INTERFERENCES DURING PHOTOELECTRIC OBSERVATIONS OF METEORS. 29 Nov 62 [8]p. 3 refs. FTD-TT-62-1428.
Order from OTS or SLA $1.10 63-15287

Unedited rough draft trans. of Vsesoyuznoe Astronomo-Geodezicheskoe Obshchestvo. Byulleten (USSR) 1960, no. 28(35) p. 6-10.
An abstract trans. is available from OTS or SLA $1.10 as 62-23694, AID-62-15, 30 Jan 62, 2p.

DESCRIPTORS: *Meteors, Detection, Interferences, Night sky, Luminescence, Stars, Light, *Photomultipliers.

For abstract see Technical Translations 8:424, 1962.

Kachalov, V. P., Khokhlov, M. Z. and others
ULTRAVIOLET Be I LINES IN THE SOLAR SPECTRUM (Ul'trafioletovye Linii Be I v Spektre Solntsa) tr. by A Pingell 14 Dec 62, 12p. 14 refs. N R L Trans. no. 924.
Order from OTS $0.50 63-11561

Trans. of Akademiya Nauk SSSR Krymskaya Astrofizicheskaya Observatoriya. Izvestiya, 1962, v 27, p. 44-51.

DESCRIPTORS: *Solar spectrum, Absorption spectra, *Ultraviolet spectroscopy, *Beryllium, Abundance, Spectrographic data.

The equivalent widths of the Be I lines λ2651 and λ2494 Å have been determined from rocket spectrograms. The oscillator strengths of three multiplets of beryllium λ3321, λ2651 and λ2494, which have a common lower level $2s2p^3P$, are considered. The relative Σ gf values for these multiplets are found experimentally. The comparison with theoretical values, computed by means of the Bates-Damgaard tables, shows that the latter are inaccurate. It seems most probable that more precise f values should lead to a decrease of the Be solar abundance determined. The relative rate of the observed equivalent widths of Be I lines in the solar spectrum points to a decrease of the continuous absorption coefficient from λ3321 Å to the side of the shorter wavelengths. (Author)

Turskii, V. S.
CONCERNING COLLISION AND CAPTURE TRAJECTORIES IN A THREE-POINT PROBLEM. 24 July 62 [23]p. 8 refs. FTD-TT-62-592; AD-284 119.
Order from OTS or SLA $2.60 62-32937

Unedited rough draft trans. of [Moscow U.]. Gosudarstvennyi Astronomicheskii Institut. Soobshcheniya (USSR) [1961] v. 114, p. 13-32.

DESCRIPTORS: *Earth, *Moon, *Gravity, *Orbital flight paths, Spheres, Motion, Satellite vehicle trajectories, Partial differential equations, Integral equations, Velocity, Differential equations, Transformation (Mathematics), Vector analysis, Perturbation theory, Dynamics, Flight, *N-body problem.

The present article is devoted to a consideration of a bounded, plane, circular problem involving three points: earth - moon - material point. Thus the motion of a point is affected only by the Newtonian forces of the earth's and the moon's gravitation. The Levi-Civita method is described for studying collision trajectories, the method which we applied to the trajectories required for a point to hit the moon. The results obtained are used to find the approximate initial conditions ensuring a hit on the moon at a predetermined moment of time. The question of the magnitude of the relative selenocentric velocity of a point entering the sphere of action of the moon on the first passage is discussed. The following symbols are used in this article: T -- earth, L -- moon, P -- point, G -- center of mass of the system T and L. (Author)

BEHAVIORAL SCIENCES

Zinchenko, V. P. and Panov, D. Yu.
CENTRAL PROBLEMS IN ENGINEERING PSYCHOLOGY 8 Feb 63 [23]p. 14 refs. JPRS: 17544.
Order from OTS $0.75 63-21087

Trans. of #Voprosy Psikhologii (USSR) 1962 [v. 8] no. 5, p. 15-30.

DESCRIPTORS: *Human engineering, *Psychology, *Automation, *Control systems, Coding, *Sensory perception, Industrial psychology.

Personnel and Training

WORKS SUBMITTED IN COMPETITION FOR THE 1963 LENIN PRIZES. 23 Jan 63 [37]p. 142 refs. JPRS: 17261.
Order from OTS or SLA $3.60 63-15359

Trans. from Izvestiya (USSR) 1962, 4 Dec, p. 3-4.

DESCRIPTORS: *Scientific personnel, Personnel, Scientific research, *Awards.

Lavrent'ev, M.
THE NEED FOR CADRES IN MODERN SCIENCE. 28 Jan 63 [8]p. JPRS: 17315.
Order from OTS or SLA $1.10 63-15375

Trans. from Izvestiya (USSR) 1962, 17 Nov, p. 2.

DESCRIPTORS: *Education, *Scientific personnel, Training, Scientific research.

Boyanov, B. and Hadjiolov, As.
PLANNED DEVELOPMENT OF MEDICAL SCIENCE AND MEDICAL EDUCATION IN BULGARIA. 18 Jan 63 [11]p. JPRS: 17193.
Order from OTS or SLA $1.60 63-15397

Trans. from Zdraven Front (Bulgaria) 1962, 29 Sep, p. 2.

DESCRIPTORS: Medicine, *Medical personnel, *Education, Public health.

Nastev, G.
PLANNED ORGANIZATION OF THE INSTITUTE FOR THE SPECIALIZATION AND ADVANCED STUDY OF PHYSICIANS IN BULGARIA. 23 Jan 63 [6]p. JPRS: 17255.
Order from OTS or SLA $1.10 63-15362

Trans. of Zdraven Front (Bulgaria) 1962, 20 Oct, p. 2.

DESCRIPTORS: *Medical personnel, *Education, Scientific organizations, *Bulgaria.

PSYCHOLOGY. [1961] [6]p. 31 refs.
Order from OTS or SLA $1.10 62-19003

Trans. of Bol'shaya Sovetskaya Entsiklopediya. Ezhegodnik (USSR) 1959, p. 528-530.

DESCRIPTORS: *Psychology, Scientific reports, History, Bibliography.

SOVIET PSYCHOLOGICAL REPORTS. 21 Jan 63 [60]p. 88 refs. JPRS: 17219.
Order from OTS or SLA $5.60 63-15392

Trans. of Voprosy Psikhologii (USSR) 1962 [v. 8] no. 4, p. 58-73, 89-98, 156-160, 172-182.

DESCRIPTORS: Psychology, *Electric potential, *Brain, *Frequency analyzers, Bioelectronics, Human engineering, Cybernetics, Philosophy, Physiology, *Safety, Nervous system, Medical equipment.

Contents:
Methods and systems for the automatic analysis of brain biopotentials, by V. D. Nebylitsyn
Engineering psychology and work safety, by Yaro Krzhivoglavy
Problems of psychology presented in cybernetics to the service of communism, by V. N. Pushkin
All-Union Conference on Philosophical Problems Related to the Physiology of Higher Nervous Activity and Psychology, Moscow, by A. M. Matushkin and F. A. Sokhin.

Faddeeva, Vera Konstantinova.
EXPERIMENTAL INVESTIGATION METHOD OF HIGHER HUMAN NERVOUS ACTIVITY. 9 Nov 62 [348]p. 712 refs. FTD-TT-358.
Order from OTS or SLA $19.75 63-15297

Unedited rough draft trans. of mono. Metodika Eksperimentalnogo Issledovaniya Vysshei Nervnoi Deyatelnosti, Moscow, 1960, 253p.

DESCRIPTORS: Medical research, *Psychology, Physiology, *Nervous system, Cerebral cortex, *Motor reactions, Brain, Spinal cord, *Conditioned reflex, Signals, Laboratory equipment, *Laboratories.

A systematic presentation is given of all basic methods used in laboratory and clinical practice, as well as a brief description of a majority of the experimental methods used at the present time in the USSR and abroad for research on the higher nervous activity of man - child and adult, healthy and diseased. (Author)

Sokolov, M.
PSYCHOLOGY. [1961] [5]p. 32 refs.
Order from OTS or SLA $1.10 62-19002

Trans. of Bol'shaya Sovetskaya Entsiklopediya. Ezhegodnik (USSR) 1960, p. 488-490.

DESCRIPTORS: *Psychology, Scientific reports, History, Bibliography.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 55 (BIOLOGY AND MEDICINE SERIES). 24 Jan 63 [27]p. JPRS: 17281.
Order from OTS or SLA $2.60 63-15370

Consists of abstracts of articles from the scientific and technical journals of Bulgaria and Yugoslavia.

DESCRIPTORS: *Abstracts, Bibliography, Biology, *Medicine, *Pathology, Diseases, Therapy, *Pharmacology, Drugs, Production, Chemical analysis.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 54 (BIOLOGY AND MEDICINE SERIES). 21 Jan 63 [35]p. JPRS: 17217.
Order from OTS or SLA $3.60 63-15394

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia and Yugoslavia

DESCRIPTORS: *Abstracts, Bibliography, Biology, *Medicine, *Pharmacology, Drugs, Production, Chemical analysis, *Physiology, Enzymes, Hormones, *Psychiatry, Psychology, *Industrial medicine, Public health, *Veterinary medicine, Diseases, *Pathology.

ABSTRACTS FROM THE EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 59 (BIOLOGY AND MEDICINE SERIES). 28 Jan 63 [42]p. JPRS: 17319
Order from OTS or SLA $4.60 63-15384

Consists of abstracts of articles from the scientific and technical journals of Hungary..

DESCRIPTORS: *Abstracts, Bibliography, Biology, Medicine, *Pharmacology, Drugs, Chemical analysis, *Neurology, *Biochemistry, Physiology, *Veterinary medicine, Diseases, *Pathology.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 61 (BIOLOGY AND MEDICINE SERIES). 29 Jan 63, 23p. JPRS: 17358.
Order from OTS $0.75 63-21014

Consists of abstracts of articles from scientific and technical journals of Bulgaria, Czechoslovakia, and Yugoslavia.

DESCRIPTORS: *Abstracts, Bibliography, Biology, *Medicine, Veterinary medicine, *Toxins and antitoxins, Physiology, Insecticides, *Parathion, Toxicity, Pathology, Public health.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 68 (BIOLOGY AND MEDICINE SERIES). 1 Feb 63 [8]p. JPRS: 17429.
Order from OTS $0.50 63-21040

Abstract trans. of Magyar Pszichologiai Szemle [sic] (Hungary) 1962, v. 19, no. 3, p. 315-363, 371-374, 378-383.

DESCRIPTORS: *Abstracts, Bibliography, Biology, Medicine, *Psychology, Drugs, Education, Mental diseases, *Hungary.

CENTRAL NERVOUS SYSTEM MECHANISMS AND MODELS: BIBLIOGRAPHY (PRELIMINARY). 22 Oct 62 [12]p. 103 refs. AID rept. 62-174; AD-287 270. Order from OTS or SLA $1.60 63-13050

DESCRIPTORS: *Brain, *Bibliography, *Nervous system, Cybernetics, Mathematical logic, Automation, Computers, *Bionics, *Models (Simulations)

WORKS OF THE INSTITUTE OF HIGHER NERVOUS ACTIVITY, PHYSIOLOGICAL SERIES, 1960, VOL. 5, tr. by M. Roublev. 1962, 276p. PL-480 HEW. Order from OTS $2.75 61-31020

Trans. of Akademiya Nauk SSSR. Institut Vysshei Nervnoi Deyatel'nosti. Trudy, Seriya Fiziologicheskaya 1960, v. 5.

DESCRIPTORS: *Psychology, *Neurology, *Physiology, Nervous system, *Conditioned reflex, Bioelectronics, *Cerebral cortex, Inhibition, Rhythm, *Electroencephalography, *Stimulation, Sound, Light, *Thalamus, Reticulo-endothelial system, Analyzers (Psychology), *Motor reactions, *Neuromuscular transmission, Reaction time, Secretion, Gastrointestinal system, Nerves, *Hearing, *Reactions (Psychology), Fishes, Dynamics, *Chlorpromazine, Pharmacology, Reflexes, Neuropsychiatry, *CNS stimulants, Piperidines, *Aging, *Tissues (Biology), Morphology, Spasms, Nuclei (Biology), *Brain, *Electrodes *Measuring devices (Electrical and electronic).

Contents:

Electrophysiological studies on the stage of generalization of conditioned defense reflexes, by I. M. Knipst

Study of local bioelectric phenomena in the cerebral cortex during conditioned reflex elaboration and durin internal inhibition, by G. I. Shul'gina

Importance of rhythmic processes in rabbit cerebral cortex during extinction of conditioned reflexes, by T. A. Korol'kova

Conditioned reflex reconstruction of human cortical EEG rhythm during combinations of light with a rhythmic sound, by R. A. Pavlygina and V. S. Rusinov

Electrical activity of cortex, thalamus, hypothalamus, and reticular formation of the rabbit's brain stem during combined stimulation with sound and a flickering light, by R. A. Pavlygina

The production of a dominant focus in the motor analysor by the application of direct current pulses, by R. A. Pavlygina and R. A. Pozdnyakova

Slow electric activity in the cerebral cortex of rabbits during fixation of a temporary connection, by T. B. Shvets

Interfocal relationships in the presence of a dominant focus and conditioned reflexes, Rept. 1, by L. S. Grechusnikova

A contribution to the question of interaction of excitation and inhibition, Rept. 1: Interaction of excitation and inhibition during a series of stimuli applied to the same analysor or to different analysors, by A. A Pavlovskaya and N. S. Koroleva

Interaction of conditioned and unconditioned secretory alimentary reflexes, by A. A. Pavlovskaya and others

The interaction of conditioned alimentary and defense reflexes. Rept. 1. Interaction of conditioned alimentary and defense reflexes during simultaneous application of conditioned alimentary and defense stimuli, by L. A. Preobrazhenskaya

The interaction of conditioned alimentary and defense reflexes. Rept. 2. Interaction of conditioned alimentary and defense reflexes during consecutive application of different types of conditioned stimuli, by L. A. Preobrazhenskaya

A contribution to the problem of the interaction of excitation and inhibition, Rept. 1: Interaction of excitation and inhibition arising in different analysors when the strength of a positive stimulus is changed, by I. M. Volkova

Pathological changes in the basic nervous processes in the presence of functional disorders of higher nervous activity, by L. P. Rudenko

Local disorder of cortical auditory analysor induced experimentally in a dog, by M. G. Airapetyants

Contribution to the characterization of excitation in the cerebral cortex of dogs under the effect of various types of conditioned reflexes, by U. G. Gasanov

The role of the complementary signal in the formation of a conditioned motor defense reaction in dogs, Rept. 1, by I. F. Aslanova

Contribution to the question of the mechanism of formation of a temporary connection during the formation of a conditioned defense motor reflex. Rept. 2. State of cortical areas united by a temporary connection, in conditions of stable elaborated motor defense reflexes, by R. L. Vinnik

Physiological role of external stimulus simultaneous in action with a movement resulting in withdrawal of food, by E. I. Plonskaya

Simple and complex food-obtaining conditioned reflexes in normal fish and in fish after removal of the forebrain, by Yu. A. Kholodov

Contribution to the comparative physiology of conditioned reflexes to a moving light stimulus, by I. M. Sheiman

On the question of the mechanism of action of chlorpromazine, by R. L. Vinnik

Contribution to the question of the effect of chlorpromazine on higher nervous activity of dogs, Rept. 3: Changes in conditioned and unconditioned alimentary reflexes after injection of chlorpromazine, by L. N. Khruleva

Contribution to the problem of effect of chlorpromazine on higher nervous activity of dogs, Rept. 4: Effect of chlorpromazine on properties of basic nervous processes and on aspects of experimental neurosis, by L. N. Khruleva

Contribution to the problem of effect of small doses of meratran on higher nervous activity of dogs (Preliminary rept.) by A. Ya. Mekhedova

Morphological and functional changes in the central nervous system of a macacus rhesus monkey as a result of aging, by M. M. Aleksandrovskaya and G. I. Shirkova

Contribution to the biochemical processes underlying the causes of clonic spasms, by K. I. Pogodaev

The degree of precision of stereotaxic implantations of electrodes in studies with nonselected rabbits, by R. M. Meshcherskii and I. A. Chernyshevskaya.

Bel'kevich, V., Vende, E., and Vil'-Vil'yams, I.
BIONICS THE ENGINEERING ART OF NATURE.
6 Feb 63 [17]p. JPRS: 17500.
Order from OTS $0.50 63-21062

Trans. of Tekhnika Molodezhi (USSR) 1962 [v. 30] no. 9, p. 36-38.

DESCRIPTORS: *Bionics, *Engineering, Sonar, Vibrators (Mechanical), Accelerometers, Temperature sensitive elements, Radar, Compasses, Gyroscopes, Radiometers.

Duplenko, K. F. and Gel'fand, L. A.
THE STUDY OF THE HISTORY OF MEDICAL SCIENCE AND PUBLIC HEALTH IN THE UKRAINIAN SSR (Izuchenie Istorii Meditsinskoi Nauki i Zdravookhraneniya Ukrainskoi SSR). 18 July 61 [22]p. JPRS: 9720.
Order from OTS or SLA $2.60 61-27241

Trans. of Sovetskoe Zdravookhranenie (USSR) 1961, v. 20, no. 4 [p. 9-15].

DESCRIPTORS: *Medicine, *Public health, *History, Scientific research, Propaganda.

Keil'man, Yu. N.
AN ATTEMPT AT MODELLING THE PROCESSES OF SELF-REPRODUCTION AND EVOLUTION. 29 Jan 63, 5p. JPRS:17359.
Order from OTS $0.50 63-21015

Trans. of Leningradskoe Obshchestvo Estestviospytatelei. Trudy (USSR) 1961, v. 72 (rev.) no. 1, p. 134-137.

DESCRIPTORS: *Bionics, *Reproduction, Models (Simulations), Electronic equipment, Relays.

A relay-type self-reproducing device is devised (although not actually constructed) which will simulate the random processes of organic reproduction and evolution.

Kucherenko, Yu. G.
SKIN HOMOTRANSPLANTATION ON DENERVATED AREA, tr. by Zelda D. Knowles. 11 May 53, 6p.
Order from OTS or SLA $1.10 61-28021

Trans. of Medychnyi Zhurnal (USSR) 1945, v. 14, p. 283-285.

DESCRIPTORS: *Skin, *Plastic surgery, Transplantation, *Nerves, Tissues (Biology), *Adhesions (Medical)

In the majority of rabbits homodermotransplantation on a denervated foreleg grafted all right. In separate cases at histological investigation the graft had taken and formation of scar tissue covered with epithelium was expressed. In other cases there was no formation of scar tissue covered with a massive layer of new epithelium, and no signs occurred of a late knitting of the edges of the wound after transplantation. The homodermotransplant in which the graft has taken throughout its life preserves signs of vitality, not differing primarily from the adjacent tissue of the recipient to which it has grown. On the foreleg of control rabbit in our experiments there was not a single case in which the graft took in the homodermotransplant On the basis of our experiments, as well as of literary data which confirm our positions, it is possible to consider homodermotransplantation on denervated tissue possible. (Author)

Petrucci, Daniele Angelo.
LIFE ENTRUSTED TO MAN (Zhizn' Doverena Cheloveku). 12 Oct 62, 11p. Trans. A-1366.
Order from OTS or SLA $1.60 63-15409

Trans. of Nauka i Zhizn' (USSR) 1961, v. 28, no. 12, p. 40-42.

DESCRIPTORS: Embryology, *Embryos, Growth, *Reproduction, *Tissues (Biology), Cells (Biology), *Culture media, Transplantation.

This is a report of an interview with the Italian scientist, Professor Petrucci. He answers questions about his growing a human embryo in a laboratory. One embryo lived and developed for 58 days.

Saparina, E.
IS THIS A COMPUTER? 18 Feb 63 [13]p. [13]p. JPRS: 17678.
Order from OTS $0.50 63-21146

Trans. of Znanie-Sila (USSR) 1962 [v. 37] no. 12, p. 34-37.

DESCRIPTORS: *Computers, *Cybernetics, Bionics, Nervous system, Simulation, Computer logic

Analogies are drawn between the workings of the brain and cybernetics devices, and current limitations of the latter are pointed out.

Savilov, A. I.
ECOLOGICAL CHARACTERISTICS OF BOTTOM COMMUNITIES OF INVERTEBRATES OF THE SEA OF OKHOTSK. 7 Feb 63 [117]p. 51 refs. JPRS: 17531
Order from OTS $2.50 63-21079

Trans. of Akademiya Nauk SSSR. Institut Okeanologii. Trudy, 1961, v. 46, p. 3-84.

DESCRIPTORS: *Ecology, *Ocean bottom, *Aquatic animals, *Marine biology, Ocean currents, Sedimentation, Salinity, Oceanographical charts.

Strokovskii, Nikolai.
CYBERNETICS IN BIOLOGY AND MEDICINE: THINKING ALOUD. 15 Jan 63 [10]p. JPRS: 17145.
Order from OTS or SLA $1.10 63-15087

Trans. from Rabochaya Gazeta (USSR) 1962, no. 269, 17 Nov, p. 2-3.

DESCRIPTORS: *Cybernetics, *Biology, *Medicine, Mathematics, Bioelectronics, Medical equipment, Automation.

Vol'fkovich, S. I. and Zil'ber, L. A.
THE CHEMIZATION OF AGRICULTURE [AND] VIRUSES AND THE ORIGIN OF CANCER. 13 Feb 63 [29]p. JPRS: 17628.
Order from OTS $0.75 63-21131

Trans. of Priroda (USSR) 1962, v. 51, no. 11, p. 24-40

DESCRIPTORS: *Agriculture, Chemicals, Plants, *Fertilizers, Minerals, *Pest control, *Growth substances, Animals, *Veterinary medicine, *Viruses, *Cancer, Genetics, Nucleic acids.

Anatomy and Physiology

NUCLEIC ACIDS TRANSLATIONS: 15 Feb 63 [93]p. 202 refs. JPRS: 17667.
Order from OTS $2.25 63-21143

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1962, v. 17, no. 12, p. 3-62.

DESCRIPTORS: *Nucleic acids, Biochemistry, *Cells (Biology), *Proteins, *Biosynthesis, Coding, Virus infections, *Microorganisms, Morphology, Microbiology, Genetics, Pathology, *Chromosomes, Physiology, *Nuclei (Biology), *Congenital anomalies, Models (Simulations), Mutations, Cytochemistry.

Contents:
Nucleic acid organization in the cell, by I. B. Zbarskii
The problem of nucleic acid specificity, by A. N. Belozerskii
Nucleic acids and protein biosynthesis, by V. S. Tongur
The problem of the universality of the nucleic acid code, by B. M. Olenov
The role of nucleic acids in viral infections, by A. S. Spirin
Nucleic acids and microorganism variability, by V. D. Timakov
The significance of microbiological objects for the study of pathological changes in genetic coding, by N. N. Zhukov-Verezhnikov and others
Chromosome organization and functioning, by A. Prokof'eva.

Agarkov, F. T., Maksimovich, V. A , and Namyatnyi, A N
THE SIGNIFICANCE OF THE ADRENAL GLANDS TO THE HEAT RESISTANCE OF AN ORGANISM. 23 Jan 63 [12]p. 20 refs. JPRS: 17250.
Order from OTS or SLA $1.60 63-15401

Trans. of Problemy Endokrinologii i Gormonoterapii (USSR) 1962, v. 8, no 5, p. 15-20.

DESCRIPTORS: *Adrenal glands, Excision, *Heat tolerance, Corticosteroid agents, Physiology, *Adrenocorticotropic hormones, Dibasol, Ascorbic acid.

Bilateral adrenalectomy leads to a diminution in the heat resistance of an organism to the harmful effects of high temperatures combined with maximal air humidity. Subcutaneous injections of cortisone in a dose of 2.5 mg per 100 g of body weight increase the heat resistance of both adrenalectomized and intact rats. No detectable effect of adrenocorticotropic hormone on the heat resistance of the animal organism was observed. Removal of adrenal glands in rats impedes the development of a state of nonspecificially increased resistance of the organism, which ordinarily arises following the injection of dibazol in a dose of 1 mg per kg. Ascorbic acid in a dose of 50 mg per kg increases heat resistance in adrenalectomized animals as well. (Author)

Bernshtein, N. A.
NEW LINES OF DEVELOPMENT IN PHYSIOLOGY AND THEIR RELATION TO CYBERNETICS. 14 Jan 63 [16]p. JPRS: 17117.
Order from OTS or SLA $1.60 63-15104

Trans. of Voprosy Filosofii (USSR) 1962 [v. 16] no. 8, p. 78-87.

DESCRIPTORS: *Cybernetics, *Physiology, Automation, Scientific research.

Federova, K. N.
THE EFFECT OF PRESSOR AND DEPRESSOR SUBSTANCES ON SYSTEMIC AND PULMONARY CIRCULATION IN HYPOXEMIC HYPOXIA. 27 Dec 62 [11]p. 10 refs. FTD-TT-62-1581.
Order from OTS or SLA $1.60 63-15301

Unedited rough draft trans. of #Byulleten' Eksperimental'noi Biologii i Meditsiny (USSR) 1962, v. 53, no. 1, p. 31-36.

DESCRIPTORS: *Drugs, *Cardiovascular system, Stimulation, Inhibition, Respiratory system, *Anoxia, *Hypercapnia, Acetylcholines, Epinephrine, Serotonin, Oxygen consumption.

Kovalenko, E. A., Babchinskii, F. V., and Korostovtseva, N. V.
EFFECT OF COMPENSATION OF EXCESSIVE INTRAPULMONARY PRESSURE ON OXYGEN INTENSITY IN BRAIN TISSUES DURING ASCENTS TO HIGHER ALTITUDES [AND] ON THE MECHANISM OF INCREASING THE RESISTANCE OF RATS TO DEEP HYPOXIC-HYPERCAPNIC HYPOTHERMIA UNDER THE INFLUENCE OF PRELIMINARY TRAINING. 7 Dec 62 [25]p. 12 refs. FTD-TT-62-1593.
Order from OTS or SLA $2.60 63-15299

Unedited rough draft trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 10, p. 1203-1217.

DESCRIPTORS: *Adaptation (Physiology), Brain, *Pressure breathing, *Oxygen consumption, *High altitude. Anoxia, *Hypercapnia, *Hypothermia.

A study is made to determine the degree of providing the organism with oxygen by the level of its intensity in the brain tissues, and to explain the dependence of oxygen supply when breathing under excess pressure on the quality of fitting the compensation suit which produces counter pressure against the body. (Kovalenko and Babchinskiy) Combined training in hypoxia, hypercapnia and cooling, as a rule, reduces the sensitivity of the organism to oxygen deficiency. An increase in resistance of rats trained to hypoxia is not always accompanied by an increase in resistance to deep hypoxic hypercapnic hypothermia; resistance to hypothermia may be increased without simultaneously increasing the resistance to hypoxia. (Korostovtseva)

Lemoigne, M.
THE ROLE OF SULFUR IN THE METABOLISM OF LIVING ORGANISMS. [1962] 39p.
Order from K-H $48.75 K-H 3963 g

Trans. of Revue des Fermentations et des Industries Alimentaires (Belgium) 1955, v. 10, p. 103-118.

DESCRIPTORS: *Sulphur, *Metabolism, Physiology.

Petrovic, D.
SERA (THEORY AND PRACTICE) (Serumi (Teorija i Praksa)) tr. by Ugo Zunjevic. 1962, 201p. 139 refs. PL-480 HEW.
Order from OTS $2.00 60-21710

Trans. of Biblioteka Higijenskog Instituta N. R. Srbije (Yugoslavia) 1959, no. 18, 198p.

DESCRIPTORS: *Serum, Body fluids, Blood, *Immunology, Immunization, Antigens, Antibodies, *Antigen-antibody reactions, Antibiotics, *Blood transfusions, Plasma substitutes, *Anaphylaxis, Communicable diseases, Animals, *Bacterial vaccines, *Virus vaccines.

Turpaev, T. M.
MEDIATORY FUNCTION OF ACETYLCHOLINE AND THE NATURE OF CHOLINORECEPTORS: CONCLUSIONS, 17 Jan 63 [9]p. JPRS: 17172.
Order from OTS or SLA $1.10 63-15114

Trans. of mono. Mediatornaya Funktsiya Atsetilkholina i Priroda Kholinoretseptora, Moscow, 1962, p. 124-129.

DESCRIPTORS: *Acetylcholines, *Chemoreceptors, *Cholinesterase, Nerves, Cells (Biology), Neuromuscular transmission, Cardiac muscle, Metabolism.

Zkhar'yants, Yu. Z. and Kotel'nikova, E. G.
A METHOD OF ANALYSING THE WORK OF MUSCLES DURING PHYSICAL EXERCISES. 29 Jan 62 [11]p. 12 refs. JPRS: 12297.
Order from OTS or SLA $1.60 62-15788

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSR) 1961 [v. 41] no. 11, p. 106-111.

DESCRIPTORS: *Exercise, *Muscles, Energy, Analysis, *Kymography, Bioelectronics.

In all exercises studied the upward movement is more rapid than the downward. At the average speed of movement the muscles manifest greater electrical activity during work against resistance than in yielding. With decelerated movement the electrical activity of the muscle increases. Proposed methods of combining materials of simultaneous registration of movements and EMG can be used extensively for obtaining more accurate information on the participation of specific muscles in movement. The temporally coinciding materials of two records "vitalize" each other -- the film materials contain a full picture of the activities of living muscles and the EMG is vitalized by a picture of man's movements. (Author)

Biochemistry

ACTA BIOCHIMICA POLONICA, 1962, VOL. IX, NO. 4, P. 301-[424] AND INDEX, VOL. IX. PL-480 HEW.
Order from OTS $1.25 62-11051-4

DESCRIPTORS: Biochemistry, *Serum amylase, *Vitamin B complex, *Pyrroles, Chromatographic analysis, Bacteria, *Glucocides, Phosphates, Esters, *Amino acids, Determination, *Citrates, Excretion, Rats, *Estrogens, Nicotine, Amides, *Kidneys, *Maleic acid, *Nucleic acids, *Phosphorylation, *Cysteine, Enzymes, *Lepidoptera, Tissues, *Snails, *Mammals, Serium, *Glycoproteins, *Peptides, *Seeds, *Desoxyribonucleic acid.

Contents:
Isolation and properties of human serum amylase, by A. Gryszkiewicz
Chromatographic separation on phosphate-cellulose of light-sensitive forms of corrinoids produced by propionic acid bacteria, by B. Zagalak and J. Pawelkiewicz
Preparation and chemical and enzymic properties of phosphate esters of 1-(β D-glucopyranosyl)uracil and -thymine, by B. Zmudzka and others
The method of combined column-paper chromatography applied to the determination of amino acids, by P. Wierzchowski and others
The influence of oestradiol benzoate and nicotinamide on citrate excretion in female rats, by L. Zelewski and others
Effect of maleic acid on the kidney. I. Oxidation of Krebs cycle intermediates by various tissues of maleate-intoxicated rats, by S. Angielski and J. Rogulski
Phosphorylating enzymes of nucleic acids. I. Incorporation of [^{32}P]orthophosphate into thymus nucleic acids, by St. Golewski
The activity of cysteine desulphhydrase and rhodanase in animal tissues, by A. Koj and J. Frendo
Decarboxylation of tyrosine and DOPA in the tissues of Celerio euphorbiae, by K. Belzecka and others
Studies on the ornithine cycle in the tissues of Helix pomatia during hibernation, by Z. Porembska and J. Heller
Studies on serum glycoproteins in the blood of various species of mammals, by J. Dzulynska and others
Occurrence of γ-L-glutamyl-L-tyrosine and γ-L-glutamyl-L-phenylalanine in seeds of Lupinus angustifolius and Lupinus albus, by M. Wiewiorowski and H. Augustyniakowa
Chemical determination of DNA in animal tissues, by S. Lovtrup.

BIOCHEMISTRY IN COMMUNIST CHINA. 23 Jan 63 [49]p. JPRS: 17258.
Order from OTS or SLA $4.60 63-15355

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1962, no. 9, p. 16-40.

DESCRIPTORS: *Biochemistry, *Enzymes, *Proteins, *Biosynthesis, *Nucleic acids, Ribonucleic acids.

Contents:
Recent developments in enzyme research, by Tsou Ch'eng-lu
The protein biosynthesis related ribonucleic acids sRNA, mRNA and ribosomal RNA, by Wang Teh-pao.

Altaner, Cestmir.
STARCH GEL ELECTROPHORESIS (Elektroforesa ve Skrobovem Gelu) tr. by Hanna Newcombe. 1962, 28p. 163 refs. NRCC Technical Trans. 1046.
Order from NRCC $1.50 NRCC C-4111

Trans. of Chemicke Listy (Czechoslovakia) 1962, v. 56, no. 3, p. 334-354.

DESCRIPTORS: *Electrophoresis, *Gels, *Starches, Preparation, Buffers, *Blood proteins, *Lipoproteins, *Hemoglobin, Enzymes, *Hormones, Chemical analysis, Immunology, Biochemical genetics, Pathology, Bibliography.

Casnati, G., Piozzi, F. and others.
CONSTITUTION OF ECHINULIN: SYNTHESIS OF 2-TERTIARY-AMYL-5,7-DIISOAMYLTRYPTOPHAN (Sulla Costituzione dell' Echinulina: Sintesi del 2-Terz. Amil-5,7-Diisoamitriptofano) tr. by D. A. Sinclair. 1962, 6p. 7 refs. NRCC Technical Trans. 1051.
Order from NRCC $0.50 NRCC C-4199

Trans. of la Chimica e l'Industria (Italy) 1961, v. 43, p. 412-414.

DESCRIPTORS: Peptides, *Amino acids, *Tryptophan, Pentyl radicals, Synthesis, Condensation reactions.

Karklin'sh, R. Ya., Paegle, A. K., and Silin'sh, E. A.
A NEW METHOD OF CONTROL IN CITRIC ACID PRODUCTION (Primenenie Novogo Metoda Kontrolya v Proizvodstve Limonnoi Kisloty) tr. by G. Belkov. 1962, 7p. 2 refs. NRCC Technical trans. 1016.
Order from NRCC $0.50 NRCC C-3951

Trans. of Vsesoyuznyi Nauchno-Issledovatel'skii Institut Konditerskoi Promyshlennosti. Trudy (USSR) 1958, v. 12, p. 53-56.

DESCRIPTORS: Control, *Citric acids, Production, Spectrographic analysis, *Chemical elements, Fungi, Growth, *Fermentation, Cadmium.

Mastalerz, Przemyslaw.
PROGRESS IN THE BIOCHEMISTRY OF GLUTAMINE (Postepy Biochemii Glutaminy) tr. by W. Kulerski. 1962 [24]p. 63 refs. PL-480 Agr.
Order from OTS $0.50 61-11321

Trans. of Postepy Higieny i Medycyny Doswiadczalnej (Poland) 1958, v. 12, no. 3, p. 241-262.

DESCRIPTORS: *Glutamine, *Biochemistry, Enzymes, *Metabolism, Amino acids, Transaminases, Synthesis, Proteins, Purines.

Palladin, A. V., Polyakova, N. M., and Malysheva, M. K.
CONTENT OF GLUTAMINASE IN VARIOUS PARTS OF THE C.N.S. AND IN THE CELLULAR STRUCTURES OF THE BRAIN. [1962] [12]p. 17 refs.
Order from OTS or SLA $1.60 62-20436

Trans. of Akademiya Nauk [SSSR]. Doklady, 1960, v. 134, no. 5, p. 1236-1239.

DESCRIPTORS: *Glutaminase, *Nervous system, *Brain, *Spinal cord, Biochemistry, Cells (Biology), Proteins, *Metabolism.

Pokrovskii, A. A. and Ponomareva, I. G.
DISTRIBUTION OF CHOLINE ESTERASES IN THE BRAIN OF THE MACACO RHESUS MONKEYS. [1962] [10]p. 6 refs.
Order from OTS or SLA $1.10 62-20435

Trans. of #Biokhimiya (USSR) 1961, v. 26, no. 2, p. 276-280.

DESCRIPTORS: *Cholinesterase, *Brain, *Primates, Acetylcholinesterase, *Cerebral cortex, Enzymes, Biochemistry.

An unequal distribution of acetyl cholinesterase in the brain of monkeys was observed. The largest activity was observed in the area olfactoria and the younger nuclei of the extrapyramidal system; the least amount of the ferment was found in the cortex (cerebral). In the motor zone of the cerebral cortex the content of acetylcholinesterase was somewhat higher than in the sensory area. An analysis of comparable data with respect to the distribution of acetyl cholinesterase in the brain of dogs, monkeys, and man, leads to the conclusion that the enzymic constitution of the brain is created according to a common plan. (Author)

Servigne, M. and Szarvasi, E.
NEW DL-LYSINE SYNTHESIS. [1962] [16]p. 9 refs.
Order from SLA $1.60 62-20151

Trans. of S[ociété de] Chim[ie] Biol[ogique]. Bull-[etin] (France) 1954, v. 36, no. 8, p. 1093-1100.

DESCRIPTORS: Biochemistry, *Lysines, *Synthesis, Amino acids.

A report has been given on a novel synthesis of dl-lysine, (a) by the condensation of bromo-1-chloro-4-butane with sodium salt of ethyl acetamidamalonate, (b) followed by hydrochloric hydrolyn's of the ethyl δ-chlorobutylacetamidomalonate thus obtained; (c) then the α-amino-ε-chlorocaproic acid formed as an intermediate is benzoylated - without first isolating it in crystalline form - to transform it into N α-benzoyl-amino-ε-chlorocaproic acid; (d) by ammonolysis, the monohydrate of the N α-benzoyl-dl-lysine is obtained which is then converted into dl-lysine monohydrochloride. (Author)

Tumova, E., Siblikova-Zbudovska, O., and Hanc, O.
BIOCHEMICAL OXIDATION OF PREGNANE STEROIDS. [1962] 7p.
Order from ATS $9.50 ATS-88P65C

Trans. of Cesk[oslovenska] Farm[acie] 1955, v. 4, p. 65-68.

DESCRIPTORS: *Pregnandiols, *Oxidation, Biosynthesis, Biochemistry, Hormones, *Steroids.

Botany

Gligic, V.
THE USE OF COLCHICINE METHOD FOR SOLUTION OF CASUAL MORPHOLOGICAL PROBLEMS (Upotreba Kolhicinske Metode za Resavanje Kauzalno-Morfoloskih Problema) tr. by Mirko Dordevic. 1962, 6p.
PL-480 Agr.
Order from OTS $0.50 60-21690

Trans. of Zemaljski Musej, Sarajevo. Novitates: Serija I/1 Prirodnih Nauka (Yugoslavia) 1945, p. 1-4.

DESCRIPTORS: *Colchicine, *Plants, *Growth, Cells (Biology), Morphology, Genetics, Mitosis, Mutations.

The polyploidy in the red onion, Allium cepa L. was successfully induced by injecting 0.25 ccm of 0.1% aqueous colchicine solution into young onion seedlings (prior to their planting), or by bathing them in the same solution. By the epiderm change, appeared under the influence of colchicine, one can conclude how it develops under normal conditions. The author regards his technique as original and the application of colchicine for solution of causal-morphological problems.

Khitrinskii, V. F. and Taran, L. D.
BIOLOGICAL CHARACTERISTICS OF HYBRIDS OBTAINED WITHOUT EMASCULATION OF THE FLOWERS. 24 Jan 63 [15]p. JPRS: 17284.
Order from OTS or SLA $1.60 63-15386

Trans. of Agrobiologiya (USSR) 1961, no. 4, p. 493-499.

DESCRIPTORS: *Plants, Morphology, *Genetics, *Pollen, Seeds, Fruits.

Pollination of non-emasculated flowers is an effective method, enabling hybrids to be obtained by either intraspecies, or inter-species crossbreeding. The greatest number of hybrids was obtained by pollination of the first and youngest stigmas of flowers able to receive pollen. The second generation of intra-species hybrids of tomatoes and peas obtained by pollination of non-emasculated flowers included seeds with clearly hybrid traits, but which do not yield diversification. The majority of hybrids obtained by pollination of non-emasculated flowers had greater productivity than hybrid plants obtained by the emasculation variant. Individual plants of the cultured type are found in the second generation of inter-species hybrids obtained by pollination of non-emasculated flowers which, however, differ from the original forms in respect to morphological traits, and surpass them with respect to productivity. For purposes of selection, in many cases it is purposeful to employ pollination of non-emasculated flowers. (Author)

Shkol'nik, M. Ya. and Solov'eva, E. A.
THE PHYSIOLOGICAL ROLE OF BORON. 1. ELIMINATION OF BORON DEFICIENCY BY USING NUCLEIC ACID, tr. by Lydia Venters. Sep 61, 17p. 53 refs.
Order from OTS or SLA $1.60 AEC-tr-4808

Trans. of Botanicheskii Zhurnal (USSR) 1961, v. 46, no. 2, p. 161-[173].

DESCRIPTORS: Biochemistry, Physiology, *Boron, *Plants, *Deficiency diseases, Inhibition, *Ribonucleic acid, Nuclei (Biology), Metabolism, Plants, Nucleic acids.

The data obtained in this experiment indicate the great role of boron in nuclein metabolism. The inadequacy of the hypothesis of Gauch and Dugger was shown who explained the dying away of the growing points of boron-deficient plants by carbohydrate starvation and who regarded that the value of boron lies in the translocation of sugars, which is the main feature of its physiological role. A hypothesis is promoted according to which disturbances in the nuclein metabolism cause the dying away of the growing points of boron-deficient plants. The data obtained on the importance of boron in the nuclein metabolism allow one to explain the cause of such a great necessity of the meristematic tissues for boron, its importance in the division of cells, differentiation of tissues and construction of cellular membranes. (Author)

Microbiology

Fedorov, V. D., Kushner, S. G., and Telitchenko, M. M.
ON THE MUTUAL EFFECT OF ALGAE AND MICROORGANISMS. PT. I: EFFECT OF THE DEVELOPING CULTURES OF PROTOCOCCUS ALGAE, CHLORELIA VULGARIS AND SCENEDESMUS OBLIQUUS, ON THE SURVIVAL OF ESCHERICHIA COLI (Vzaimootnosheniya Vodoroslei i Mikroorganizmov. I. Vliyanie Razvivayushchikhsya Kul'tur Protokokkevykh Vodoroslei Chlorella Vulgaris i Scenedesmus Obliquus na Vyzhivaemost' Kisechnoi Palochki). 4 Oct 62, 14p. 13 refs. Trans. A-1364.
Order from OTS or SLA $1.60 62-33564

Trans. of Nauchnye Doklady Vysshei Shkoly. Biologicheskie Nauki (USSR) 1962, no. 2, p. 160-165.

DESCRIPTORS: *Algae, *Bacteria, Growth, Purification *Hydraulic reservoirs, Escherichia, *Microorganisms.

Fuhs, G. Wolfgang.
THE MICROBIAL BREAKDOWN OF HYDROCARBONS. [1962] 64p. (tables formulae refs. omitted).
Order from SLA $6.60 62-18780

Trans. of Archiv für Mikrobiologie (Germany) 1961, v. 39, p. 374-422.
Another trans. is available from OTS or SLA $6.60 as 62-25600, JPRS-14362, 3 July 62 [65]p.

DESCRIPTORS: *Microorganisms, Decomposition, *Hydrocarbons, Biosynthesis, Oxidation, Bacteria, Actinomyces, Ecology, Soils, Methanes, Oils.

Golovin, P. N.
BASIC PROBLEMS OF MYCOLOGY (Osnovnye Zadachi Mikologii). 10 Oct 62, 4p. Trans. A-1371.
Order from OTS or SLA $1.10 62-33559

Trans. of Akademiya Nauk [SSSR]. Vestnik, 1962, v. 32, no. 7, p. 122.

DESCRIPTORS: Conferences, *Fungi.

Kordyum, F. A., Lazurkevich, Z. V., and Zharova, L. G.
A SIMPLE PROCEDURE FOR CHECKING THE BACTERIOLOGICAL PURITY OF CULTURES OF UNICELLULAR ALGAE AND DETECTING BACTERIAL MUTANTS (Prosta Metodika Perevirki Bakteriologichnoi Chistoti Kul'tur Odnoklitinnykh Vodorostei, a Takozh Vyyavlennya Bakterial'nykh Mutantiv). 11 Oct 62, 4p. 2 refs. Trans. A-1367.
Order from OTS or SLA $1.10 62-33562

Trans. of Mikrobiologichnyi Zhurnal (USSR) 1962, v. 24, no. 4, p. 61-63.

DESCRIPTORS: Culture media, *Algae, *Bacteria, *Mutations, Growth.

Pathology

ARCHIVES OF IMMUNOLOGY AND EXPERIMENTAL THERAPY, 1962, VOL. 10, NO. 1 (Archivum Immunologiae et Therapie Experimentalis). 1963, 317p. PL-480 HEW.
Order from OTS $3.75 62-11069/1

English ed. of [Archiwum Immunologii i Terapii Doswiadczalnej] (Poland) 1962, v. 10, no. 1.

DESCRIPTORS: *Immunology, *Therapy, *Potassium compounds, Iodides, Storage, Water, *Metabolism, *Radiation sickness, *Body fluids, *Electrons, *Body fats, Spectrographic analysis, *Cancer, Tannic acids, Phagocytosis, Antigens, Staphylococcus, Agglutination, *Serum, *Yeasts, Adaptation (Physiology), *Tubercle bacilli, *Theophylline, Sulfur compounds, Toxicity, *Diuretics, Antibiotics, *Furan derivatives, Nitro radicals, Statistical analysis, *Sensitivity, Microorganisms, *Electron microscopes.

Contents:
Storage losses of potassium iodide in iodized salt and the possibility of their elimination, by R. Reisenauer and O. Likar
Disorders in the distribution of water between the extracellular space and cells in acute radiation disease, by S. Kosmider and E. Rogala
Concerning loosely bound electrons in body fluids and methods of studying them, by J. Kubicz
The optical transmittance of solutions of human fat in various surgical conditions with special regard to cancer disease, by T. Cieszynski
The action of tannin on the process and components of phagocytosis, I-II, by H. Makower and others
Studies of the antigenic structure of staphylococcus aureus, by D. Jungerman
The phenomenon of conglutination in human sera, by S. Jasser and I. Bragiel
Agglutinating properties of yeasts from flower nectars, by M. Dolezal
Studies of the mechanism of the reaction to tubercle bacilli, by S. Grys
Pharmacologic properties of sulphur derivatives of theophylline, by J. Maj and others
On the diuretic activity of a new sulphur derivative of theophylline, by J. Maj and others
Combined action of antibiotics and nitrofurazone, by J. Bielawski
Statistical analysis of sensitivity to antibiotics of some species of microorganisms, by B. Lipnicki
The electron microscope: an introduction to applied electron microscopy, by V. Bystricky.

AZERBAIDZHAN MEDICAL JOURNAL, 1962 [VOL. 39] NO. 10: [SELECTED] ARTICLES. 22 Jan 63 [38]p. 34 refs. JPRS: 17222.
Order from OTS or SLA $3.60 63-15403

Trans. of Azerbaidzhanskii Meditsinskii Zhurnal (USSR) 1962, no. 10, p. 16-25, 31-42, 81-83.

DESCRIPTORS: *Tuberculosis, *Bone, Surgery, *Transplantation, Pathology, *Eye, *Radiation sickness, Radioprotective drugs, Thiols, *Cysteinamines Therapy, Amines, Ethyl radicals

Contents:
Comparative data on the surgical treatment of hip joint tuberculosis by means of auto-, hetero- and homo-transplantation of bone, by N. I. Bunyadov
Comparative data on auto, hetero- and homologous bone grafts in surgical treatment of tuberculosis of the hip joint, by N. N. Bunyatov
Pathomorphological changes in the eye during acute radiation sickness, by V. M. Alikishibekov
Protective effect of beta-mercaptoethylamine in acute radiation sickness, by M. S. Isaev and I. T. Shevchenko
Characteristics of grape therapy "ampelotherapy", by E. Paramova

PLANNED DEVELOPMENT OF PUBLIC HEALTH SERVICES AND ORGANIZATION IN BULGARIA. 28 Jan 63 [38]p. JPRS: 17321.
Order from OTS or SLA $3.60 63-15383

Trans. of Sreden Meditsinski Rabotnik (Bulgaria) 1962, no. 6, p. 3-13; Khigiena [Epidemiologiya i Mikrobiologiya] (Bulgaria) 1962, v. 5, no. 5, p. 1-16; and from Zdraven Front (Bulgaria) 1962, 29 Sep, p. 2.

DESCRIPTORS: *Public health, *Communicable diseases, *Countermeasures, Epidemiology, Medical personnel, *Bulgaria.

Contents:
Planned development of public health services, by Khr. Petkov
Planned organization of public health services, by Khr. Petkov
Planned development of antiepidemic work, by Em. Kamenov.

PRIMARY PROBLEMS IN THE PATHOLOGY OF NEW BORN CHILDREN. 30 Jan 63 [20]p. JPRS: 17378.
Order from OTS $0.50 63-21019

Trans. of Pediatriya (USSR) 1962 [v. 41] no. 11, p. 3-16.

DESCRIPTORS: *Pathology, *Infants, *Physiology, Preventative medicine.

Contents:
Urgent problems in the physiology and pathology of newborn children and ways toward their resolution, by A. F. Tur
The chief results of research on the problem "health protection for newborn and premature children for 1960-61 and tasks of future research, by M. Ya. Studenikin and others.

RESPIRATION INJURIES AND HYDROLYSIN L-103 NUTRITION FOR CHILDREN. 28 Jan 63, 25p. 20 refs. JPRS: 17333.
Order from OTS $0.75 63-21004

Trans. of Vestnik Khirurgii (USSR) 1962, v. 89, no. 11, p. 41-48, 75-80, 131-134.

DESCRIPTORS: Injuries, *Respiratory system, *Drugs, Nutrition, *Burns, Stimulation, Nerves, Diaphragm, *Children, *Plasma substitutes, Peptide hydrolases.

Contents:
Burns of the respiratory tract, by L. M. Klyachkin and others
Electrostimulation of the diaphragmatic nerves during apnea, by R. S. Svidler and S. A. Geshelin
Experience with the use of hydrolysin L-103 in children, by N. S. Anishin.

SOVIET MEDICINE [1962] VOL. 26, NO. 10: SELECTED ARTICLES. 6 Feb 63 [25]p. 27 refs. JPRS: 17498.
Order from OTS $0.75 63-21086

Trans. of Sovetskaya Meditsina (USSR) [1962] v. 26, no. 10, p. 3-13, 42-45, 110-114.

DESCRIPTORS: Medicine, Surgery, *Blood vessels, Surgery, *Metabolism, *Arteriosclerosis, Lipids, Electrosleep, *Hypertension, Proteins, Therapy, *Synthetic fibers, *Underwear, Pathology, Vinyl plastics.

Contents:
The current status of vascular surgery, by B. V. Petrovskii and V. S. Krylov
Lipoid and protein metabolism in patients with arteriosclerosis, by V. N. Kozlovskii
Electric sleep as a method of neurotropic treatment of essential hypertension, by G. V. Sergeev
Hygienic evaluation and the use of underwear made of chlorin (vinyl perchloride) for therapeutic purposes, by K. A. Rapoport.

STUDIES IN HYPOTHERMIA. 23 Jan 63 [15]p. JPRS: 17262.
Order from OTS or SLA $1.60 63-15356

Trans. of mono. Iskusstevennaya Gipotermiya (Artificial Hypothermy) Tashkent, 1961, p. 3-7 and 21-24.

DESCRIPTORS: *Hypothermia, *Blood transfusions, *Anaphylactic shock, Proteins, Blood, Morphology, *Radiation effects

Contents:
The effect of hypothermy on the development of hemotransfusion and anaphylactic shock, by N. Kh. Abdullaev
The effect of hypothermy on the morphological and protein composition of the blood of irradiated animals by Ch. I. Burshtein and others.

THERAPEUTIC ARCHIVES, 1962 [VOL. 34] NO. 11: [SELECTED] ARTICLES. 22 Jan 63 [21]p. 26 refs. JPRS: 17240.
Order from OTS or SLA $2.60 63-15360

Trans. of Terapevticheskii Arkhiv (USSR) 1962 [v. 34] no. 11, p. 46-51, 101-103, 114-117.

DESCRIPTORS: *Therapy, Metabolism, Proteins, *Mucin, *Rheumatic diseases, *Anticoagulants, Drugs, *Coumarins, *Acetylcholine, Inhibition, *Pneumoconiosis

Contents:
Aspects of changes in protein fractions and glycoproteides in rheumatism and inflammatory disorders in transpolar conditions, by Yu. M. Gubachev
On the effect of the anticoagulant omephin on the blood's coagulation system, by L. P. Yastrebova
Fubromegan as a symptomatic agent for the treatment of pneumoconiosis, by V. E. Lyubomudrov and others.

Aleksandrov, N. I. and Gefen, N. E.
ACTIVE SPECIFIC PROPHYLAXIS OF INFECTIOUS DISEASES AND ITS IMPROVEMENT. 20 Dec 62 [391]p. JPRS: 16793.
Order from OTS $5.00 63-11526

Trans. of mono. Aktivnaya Spetsificheskaya Profilaktika Infektsionnykh Zabolevanii i Puti'Ee Usovershenstvovaniya, Moscow, 1962.

DESCRIPTORS: *Communicable diseases, Epidemiology, Countermeasures, *Immunology, Anthrax, Plague, Tularemia, Brucellosis, Anaerobiology, Diphtheria, Typhus fever, Immunization, Typhoid, Gas gangrene, Cholera, Tetanus, Bacteriophages, Aerosols, *Inhalation immunization, Dosage.

The first part of this work represents a review of the general principles of specific prophylaxis of the most dangerous infectious diseases. The second part analyzes the methods of specific prophylaxis of zoonotic diseases: anthrax, plague, tularemia, brucellosis, and the possibilities of improving these methods. In the third part methods of specific prophylaxis of intestinal diseases, anaerobic diseases and diphtheria as well as typhus are analyzed. The fourth part is on physiological methods (enteral, intranasal and inhalational) vaccination. In this part the results of our own studies in the utilization of physiological methods of vaccination are presented. (Author)

Glatt, R.
A NEW TECHNIQUE: CHEMICAL OSTEOSYNTHESIS (Une Technique Nouvelle: l'Osteosyntheses Chimique) tr. by Tatiana Boldyreff. 19 Sep 61, 10p. (figs. refs. omitted). NMS Trans. 625.
Available on loan from OTS 62-25707

Trans. of a reprint from Praxis (Switzerland) 1960, v. 49, no. 39, p. 930-932.

DESCRIPTORS: *Biosynthesis, *Bone fracture, Bone, Healing, Plastics.

Klyachkin, L. M., Murazyan, R. I., and Chertkov, I. L.
CLINICAL PATHOLOGY OF INTERNAL ORGANS IN BURN DISEASE [AND] THE ROLE OF THE PROPERDINE TEST IN ASSESSING THE REACTION OF AN ORGANISM TO BURN SHOCK. 5 Feb 63 [20]p. 25 refs. JPRS: 17470.
Order from OTS $0.75 63-21052

Trans. of Klinicheskaya Meditsina (USSR) 1962, v. 40, no. 10, p. 26-35.

DESCRIPTORS: Pathology, *Burns, Adaptation (Physiology,) Tests, Blood, *Properdine, *Traumatic shock, Diseases.

Lickint, F.
THE TOBACCO-SMOKE-CONDITIONED INCREASE OF THE LUNG CANCER. [1962] 15p.
Order from K-H $18.75 K-H 5796 c

Trans. of Hippokrates (West Germany) 1956 [v. 27] no. 18, p. 588-592.

DESCRIPTORS: *Cigarettes, Tobacco, Smokes, *Cancer, *Lungs.

Mirzoeva, M. E.
CLINICAL EFFECTIVENESS OF TRANSFUSION OF A DRY LEUCOCYTIC MASS IN LEUCOPENIC CONDITIONS. 21 Jan 63 [11]p. 9 refs. JPRS: 17210.
Order from OTS or SLA $1.60 63-15393

Trans. of Azerbaidzhanskii Meditsinskii Zhurnal (USSR) 1962, no. 11, p. 15-20.

DESCRIPTORS: *Blood transfusions, *Leukocytes, Leukopenia, Radiation sickness, Storage, Preservation, *Dehydration, Toxicity.

The dry leucocytic mass can be recommended for use in combination with other therapeutic preparations (Vitamin B_{12}, steroid hormones) in the treatment of patients suffering from agranulocytosis. In leukopenia of radiation etiology, especially when the dry leucocytic mass had been employed simultaneously with radiation therapy in the prevention of the radiation syndrome, the dry leucocytic mass proved to be more effective than the available medicinal preparations: tesan, pentoxyl, sodium nucleinate, and leucogen. Transfusion of the dry leucocytic mass to patients receiving thiotepa therapy creates the possibility of a prolonged use of thio-tepa without the onset of the leukopenic syndrome. Our clinical use of the solution of dry leucocytic mass demonstrated that it is of little effect in its transfusion to patients suffering from metamalarial splenomegaly and leukopenia. (Author)

Mityushin, V. M.
BIOLOGICAL PRINCIPLES OF MALIGNANT GROWTH (Biologicheskie Osnovy Zlokachestvennogo Resta). 11 Oct 62, 7p. Trans. A-1370.
Order from OTS or SLA $1.10 62-33560

Trans. of Akademiya Nauk [SSSR]. Vestnik, 1962, v. 32, no. 7, p. 118-120.

DESCRIPTORS: *Biology, *Cancer, Pathology, Growth, Cells (Biology), Tissues (Biology), Morphology, Genetics, Scientific reports.

Ozaki, Kakuji.
THALAMIC EPILEPTIC CONVULSION. [1962] 22p.
Order from K-H $27.50 K-H 3618

Trans. of Jap. J. of Brain Physiol. [sic] 1942, v. 5, p. 79-88.

DESCRIPTORS: *Convulsive disorders, *Epilepsy, *Thalamus.

Pastukhov, B. M., ed.
ORGANIZATION AND METHOD OF FIGHTING ANTHRAX. 21 Jan 63 [57]p. JPRS: 17203.
Order from OTS or SLA $5.60 63-15390

Trans. of mono. Sibirskaya Yazva; Sbornik Organizatsionnykh i Metodicheskikh Materialov (Anthrax; Collected Data on Organization and Method) Moscow, 1962, p. 3-4, 40-68, 74-89.

DESCRIPTORS: *Communicable diseases, Control, *Anthrax, Storage, Microorganisms, *Epidemiology, Biological laboratories, *Diagnosis, *Therapy, Animals, Man, Decontamination, *Anthrax vaccine, Typhoid fever, Water, Sanitary engineering.

Contents:
Introduction
Instructions on the procedure for storing, handling, and dispensing pathogenic bacteria, viruses, and other microbes, as well as bacterial toxins and poisons of animal origin
Instructions governing the use of stationary steam disinfecting chambers employing steam, both steam under pressure, as well as at normal atmospheric pressure
Instructions governing the use of stationary steam-formalin disinfecting chambers
Procedure for operating stationary steam-formalin chambers
Temporary instructions for disinfecting rags in steam chambers
Instructions on investigating drinking water from agents causing typhus abdominalis, parathphoid fever, dysentery, cholera and anthrax
Directions for the vaccination of humans with anthrax STI live vaccine by scarifying the skin
Directions for subcutaneous vaccination of humans with anthrax STI live vaccine
Directions for diagnosing anthrax and for determining post-infection and post-vaccination reactivity to it through an intracutaneous allergy test employing the anthrax allergen, "anthraxin".

Polanka, Ed. and Slavetinsky, Milan.
THE INFLUENCE OF SMOKING UPON GINGIVITIS. [1962] 4p.
Order from K-H $5.00 K-H-3653

Trans. of Prakticki Zubni Leka[rstvi] (Czechoslovakia) 1954, v. 2, no. 10, p. 223-225.

Polettini, B.
ON THE IMPORTANCE OF TOBACCO IN THE GENESIS OF CANCER. [1962] 9p.
Order from K-H $11.25 K-H 3225 h

Trans. of Athena (Italy) 1954, v. 20, p. 147-150.

DESCRIPTORS: *Tobacco, Smokes, *Cigarettes, *Cancer, Etiology.

Popov, G. A.
CONFERENCE OF THE MINISTERS OF PUBLIC HEALTH OF THE COUNTRIES OF THE SOCIALIST CAMP. 11 Jan 63 [30]p. JPRS: 17099.
Order from OTS or SLA $2.60 63-15106

Trans. of Sovetskoe Zdravookhranenie (USSR) 1961, v. 20, no. 12, p. 6-24.

DESCRIPTORS: Conferences, *Public health, Medicine.

Potte, Michel.
ETIOLOGY AND TREATMENT OF CANCER OF THE LOWER LIP AND ITS ADENOPATHIES (LYMPH-GLAND METASTASES). [1962] 8p.
Order from K-H $10.00 K-H 3710 a

Trans. of J[ournal] des Sciences Médicales de Lille (France) 1955, v. 73, no. 3, p. 138-143.

DESCRIPTORS: Etiology, *Cancer, *Mouth, Lymphatic system.

Priorov, N. N., Dvorkin, A. M., and Kheifets, L. Z.
ORGANIZATION OF MEDICAL TREATMENT FOR INJURIES. 25 Jan 62 [41]p. JPRS: 17305.
Order from OTS or SLA $4.60 63-15372

Trans. of mono. Profilaktika Travmatizma v Sel'skokhozyaistvennom Proizvodstva i Lechebnaya Pomoshch' pri Travmakh (Prevention of Injuries in Agricultural Production and Medical Assistance during Injuries) Moscow, chap. 2, p. 84-109.

DESCRIPTORS: *Injuries, Medicine, *Rural areas, Public health.

Rozina, E. E. and Amchenkov, A. M.
CHANGES IN THE CENTRAL NERVOUS SYSTEMS OF MONKEYS FOLLOWING INFECTION WITH VARIOUS STRAINS OF POLIOMYELITIS VIRUS. [1962] 7p.
Order from ATS $12.00 ATS-57P66R

Trans. of Arkh[iv] Patol[ogii] (USSR) 1962, v. 24, no. 5, p. 57-63.

DESCRIPTORS: *Poliomyelitis virus, Communicable diseases, Primates, Brain, Spinal cord.

Staszewski, Jerzy.
ON THE ETIOLOGY OF BRONCHIAL CARCINOMA (FROM THE INSTITUTE OF ONCOLOGY, GLWICE BRANCH). [1962] 13p.
Order from K-H $16.25 K-H-11411-i

Trans. from Nowotwory (Poland) 1958, v. 8, no. 1.

DESCRIPTORS: Etiology, *Cancer, *Lungs.

Vishnevskii, A. A. and Shraiber, M. I.
THERMAL AND ELECTRIC BURNS. 24 Jan 63 [32]p. JPRS: 17274.
Order from OTS or SLA $3.60 63-15374

Trans. of mono. Voenno-Polevaya Khirurgiya (Military Field Surgery) Moscow, 1962, chap. 7.

DESCRIPTORS: *Burns, *Therapy, Electricity, Radiation effects, Injuries.

Pharmacology and Toxicology

Aleksandrov, N. I., Gefen, N. E. and others.
STUDY OF THE METHOD OF AEROSOL IMMUNIZATION WITH DUST ANTIPLAGUE VACCINE ON A WIDE CONTINGENT OF PEOPLE (Aerozol'naya Immunizatsiya Sukhimi Pylevymi Vaktsinami i Anatoksinami. Soobshchenie 8. Izuchenie Metoda Aerozol'noi Immunizatsii Pylevoi Protivochumnoi Vaktsinoi na Shirokikh Kontigentakh Lyudei). Communication on Aerosol Immunization with Dry Dust Vaccines and Toxoids. 20 Aug 62, 10p. Trans. V-1794.
Order from OTS or SLA $1.10 62-32595

Trans. of #Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1962, v. 33, no. 7, p. 46-50.

DESCRIPTORS: *Inhalation immunization, *Population, Immunization, Aerosols, *Plague, Vaccines, Adaptation (Physiology), Antigen-antibody reactions.

The aerosol immunization of people with the dust plague vaccine, utilized in a dose of 150-200 million of live microbes of the vaccinal strain EB, is virtually, non-reactogenic but still causes characteristic changes in the peripheral blood of the vaccinated. The aerosol method of immunization, tested under practical conditions on sufficiently large contingents of men, proved to be very simple and permitted, in a short time, conducting mass immunization of people. (Author)

Derankova, Elizabeta Borisovna.
DIBAZOL IN THE PREVENTION AND THERAPY OF TOXEMIA OF LATE PREGNANCY: CHAPS. 3-5 AND CONCLUSIONS. 16 Nov 62 [65]p. FTD-TT-62-1302.
Order from OTS or SLA $6.60 63-15283

Unedited rough draft trans. of mono. Dibazol v Profilaktike i Lechenii Pozdinkh, Leningrad, 1961, p. 34-100.

DESCRIPTORS: *Dibazol, Drugs, *Pharmacology, Therapy, Inhibition, Toxicity, *Pregnancy, Vasomotor drugs.

Contents:
Pharmacological characteristics of dibazol
Clinical use of dibazol in toxemias of late pregnancy
Comparative evaluation of the results of using dibazol in the treatment of different forms of toxemias of late pregnancy.
Conclusions.

Anasiewicz, Wanda.
OPERATION OF OPEN PHARMACIES IN HUNGARY. 14 Jan 63 [10]p. JPRS: 17130.
Order from OTS or SLA $1.10 63-15084

Trans. of Farmacja Polska [1962] v. 18, no. 15/16, p. 372-376.

DESCRIPTORS: Pharmacology, *Drugs, *Control, Distribution, Standards, Standardization, *Hungary.

Esser, H. and Heinzler, F.
CLINICAL EXPERIENCES WITH A NEW SEDATIVE AND HYPNOTIC. [1962] 7p. (refs. formula omitted).
Order from SLA $1.10 62-18890

Trans. of Therapie der Gegenwart (Germany) 1956, v. 95, p. 374-376.

DESCRIPTORS: *Thalidomide, *Drugs, *Hypnotics and sedatives, Piperidines, Sleep, Toxicity, Pharmacology, Hyperthyroidism, *Addiction, Phthalyl radicals, Imides.

The results of clinical tests with K 17, a drug distinguished by complete absence of toxicity in animal experiments, may be summed up in the statement that the substance has proved beneficial as a sedative and hypnotic, as well as in the treatment of thyrotoxicosis. Apart from some constipation in bed patients, no other undesirable side effects were recorded. According to the available evidence, K 17 causes no euphoria, so that the danger of addiction may be ruled out.

Jung, Hermann.
CLINICAL EXPERIENCE WITH A NEW SEDATIVE (Klinische Erfahrungen mit einem Neuen Sedativum). [1962] 9p. 1 ref.
Order from SLA $1.10 62-18889

Trans. of Arzneimittel-Forschung (West Germany) 1956, v. 6, p. 430-432.

DESCRIPTORS: *Thalidomide, *Drugs, *Hypnotics and sedatives, Piperidines, Sleep, Toxicity, Pharmacology, Hyperthyroidism, Hypertension, Phthalyl radicals, Imides.

The sedative effect of N-phthalylglutamic acid imide (K 17) is considered. The product was tested on more than 300 patients. With one exception, no undesirable side effects were observed with normal doses. However, if these should occur (drowsiness, vertigo, restlessness, tremor, obstipation), they are due to overdosage. Dosage should be individually adapted as far as possible. K 17 proved to be excellent in all forms of vegetative dystonia as well as in mild forms of hyperthyroidism and thyrotoxicosis. In many cases, thyrostatic drugs can be dispensed with or their quantity reduced. K 17 exerts a beneficial effect on nervous gastric disorders and unstable hypertension, both of which can be classified in the vegetative dystonia group. Bronchial asthma was also favorably affected. K 17 alone and in combination with barbiturates seems valuable for the management of insomnia. Injuries to the hematopoietic system or the liver were not observed in any of the cases. K 17 was even tolerated by patients with hepatic pathology. (Author)

Konstantinova, A. I. and Chertova, N. D.
LUNG CANCER MORBIDITY IN RELATION TO AIR POLLUTION. 7 Feb 63 [6]p. 2 refs. JPRS: 17523.
Order from OTS $0.50 63-21071

Trans. of Klinicheskaya Meditsina (USSR) 1962, v. 40, no. 12, p. 104-106.

DESCRIPTORS: *Vital statistics, *Lungs, *Cancer, Urban areas, Waste gases, Petroleum, *Atmospheric pollution.

The work is based upon a study of case histories of illness and statistical data on lung cancer morbidity and mortality over a period of 10 years. A total of 167 case histories were analyzed. The data show that the lung cancer mortality rate among individuals over 29 years of age is higher in the industrial section of the city. This supports in some measure the opinion of other authors concerning the effect of air pollution from petroleum products and other industrial discharges upon the occurrence of lung cancer. (Author)

Kunz, W., Keller, H., and Mückter, H.
N-PHTHALYL-GLUTAMIC ACID IMIDE: EXPERIMENTAL STUDIES OF A NEW SYNTHETIC COMPOUND WITH SEDATIVE PROPERTIES. [1962] 17p. (refs. omitted).
Order from SLA $1.60 62-18887

Trans. of Arzneimittel-Forsch[ung] (West Germany) 1956, v. 6, p. 426-430.

DESCRIPTORS: *Thalidomide, *Drugs, *Hypnotics and sedatives, Piperidines, Toxicity, Sleep, Pharmacology, Glutamine, Toxicity, Phthalyl radicals, Imides.

Lazarev, N. V. and Levina, E. N., eds.
MANGANESE OXIDES: [SELECTED PARTS]. 11 Feb 63 [26]p. JPRS: 17557.
Order from OTS $0.75 63-21091

Trans. of mono. Okisly Margantsa, Leningrad, 1962, p. 2-6, 14-18, 108-110, 153-163.

DESCRIPTORS: *Industrial medicine, *Manganese compounds, Oxides, Toxicity, *Poisoning, Metal poisoning.

Contents:
Introduction
Some data on the prevalence of occupational manganese poisoning, by E. N. Levina
The hygienic importance of manganese oxides in certain production processes, by M. M. Tuchenko
Conclusion
Table of contents.

Ledermann, Sully.
CANCERS, TOBACCO, WINE AND ALCOHOL. [1962] 17p.
Order from K-H $21.25 K-H-3746

Trans. of Concours Méd[ical] (France) 1955, v. 77, no. 11, p. 1107, 1109-1111, 1113-1114.

DESCRIPTORS: *Cancer, *Tobacco, *Wines, *Alcohol.

Sornet, R.
NATURAL MENTHOL AND SYNTHETIC MENTHOLS. [1962] 8p.
Order from K-H $10.00 K-H 9793 b

Trans. of Revue de Chimie Industrielle [et le Moniteur Scientifique de Quesneville (France) 1927, v. 36, no. (?) p. 12-15.

DESCRIPTORS: *Camphors, Synthesis, Drugs.

Stärk, G.
CLINICAL EXPERIENCE WITH THE SEDATIVE K 17 IN TUBERCULOSIS SANATORIA AND GENERAL PRACTICE (Klinische Erfahrungen mit dem Sedativum K 17 in der Lungenheilstätte und der Allgemeinen Praxis). [1962] 8p. (figs. refs. omitted).
Order from SLA $1.10 62-18888

Trans. of Praxis (Switzerland) 1956, v. 45, p. 966-968.

DESCRIPTORS: *Thalidomide, Drugs, *Hypnotics and sedatives, Piperidines, Sleep, Toxicity, Pharmacology, *Tuberculosis, *Therapy, Phthalyl radicals, Imides.

There is a large area of indication for sedatives that are well tolerated and harmless within the scope of extensive tuberculosis therapy, which is not carried out solely with chemotherapeutic measures. The test product K 17 exerted an excellent effect as a soporific. This was frequently the case when other agents (barbiturates) failed. As a daytime sedative, it proved extremely useful for nervous, autonomic, climatic, climacteric and mild psychotic disturbances. It is a valuable adjuvant in bronchial asthma and essential hypertension. With regard to the degree of effectiveness, it is approximately between the sedatives containing alkaloid and chlorpromazine. Specific chemotherapeutic tuberculosis treatment is greatly enhanced by general relaxation and calming, which constitute a considerable aid to the physician in managing the patients, who are often quite obstinate. (Author)

Tregubenko, I. P.
EFFECT OF ETHYLENEDIAMINE TETRAACETATE ON KIDNEY FUNCTION. [1962] [5]p. 4 refs.
Order from OTS or SLA $1.10 62-32585

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 110, no. 5, p. 874-876.

DESCRIPTORS: *Drugs, *Pharmacology, *Metal poisoning, Therapy, *Ethylenedinitrilo tetracetates, Salts, Sodium, Calcium, Radiation sickness, Hypercalcemia.

Veremeenko, K. N.
DEPRESSION OF TRYPSIN ACTIVITY BY BLOOD PLASMA. [1962] [11]p. 24 refs.
Order from OTS or SLA $1.60 62-33087

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1960, v. 32, no. 6, p. 793-807.

DESCRIPTORS: *Trypsin, *Drugs, Pharmacology, Inhibition, *Blood plasma, *Enzymes, Decomposition, Proteins, Fever, Therapy.

The present article supports the conception that the binding of trypsin by the inhibitors in the plasma is reversible and that this complex tends to dissociate. The antifebrile action of trypsin is based on the decomposition of certain proteins or peptides, which have a strong affinity for the enzyme.

Radiobiology

HERALD OF ROENTGENOLOGY AND RADIOLOGY, 1962, VOL. 37, NO. 5: SELECTED ARTICLES. 8 Feb 63 [25]p. 3 refs. JPRS: 17533.
Order from OTS $0.75 63-21081

Trans. of Vestnik Rentgenologii i Radiologii (USSR) 1962, v. 37, no. 5, p. 49-63.

DESCRIPTORS: X-rays, Radiobiology, *Radiation hazards, *Radiation therapy, *Radiological physics, *Kymography, *Medical equipment, *Dosimeters, Capacitors, Gamma rays

Contents:
Some problems of work organization and radiation safety in X-ray clinics, by V. P. Vikturina and V. I. Gordon
EKS-60 electrokymograph, by I. K. Tabarovskii and others
General-purpose capacitor dosimeter for X-ray and gamma-radiation, by A. N. Krongauz and others

HYGIENE AND SANITATION [1962, VOL. 27, NO. 4]: SELECTED ARTICLES. 27 Aug 62 [33]p. 23 refs. JPRS: 14974. NASA N62-17969
Order from OTS or SLA $3.60 62-32545

Trans. of Gigieniya i Sanitariya (USSR) [1962, v. 27, no. 4] p. 18-24, 56-60, 67-71, 88-91.

DESCRIPTORS: Sanitary engineering, *Health physics, Adaptation (Physiology), Temperature, Analyzers (Psychology), Health physics instrumentation, *Radiological contamination, *Decontamination, Water, Radioactivity, Industrial medicine, *Vibration, Oscillation, Pulse generators, Gamma rays, Barents sea.

Contents:
The effect of acclimatization to cold on the skin analyzor, by N. I. Bobrov
Hygienic standards for work with radioactive substances in public health institutions, by E. I. Vorob'ev and P. I. Moiseitsev
Lowering of the radioactivity of water contaminated by Sr-89 with certain hydrobionts and silt, by G. D. Lebedeva
The question of physical-hygienic evaluation of pulse oscillations, by E. Ts. Andreeva-Galanina and V. R. Usenko
The gamma background of the coast and certain regions of the Barents Sea, by A. F. Fedorov and V. S. Zlobin.

HYGIENE AND SANITATION, 1962, VOL. 27, NO. 9: [SELECTED] ARTICLES. 23 Jan 63 [46]p. 40 refs. JPRS: 17249.
Order from OTS or SLA $4.60 63-15350

Trans. of Gigiena i Sanitariya (USSR) 1962, v. 27, no. 9, p. 30-34, 85-90, 98-99, 103-109.

DESCRIPTORS: Sanitary engineering, *Radiological contamination, *Soils, Physiology, Labor, *Bioelectronics, Beta particles, *Water supplies, Exercise, *Reaction (Psychology), Children, *Fatigue (Physiology), Cerebral cortex.

Contents:
Some facts on natural environmental radioactivity caused by the presence of K-40, by V. I. Ryadov and N. V. Petrukhin
Recording of physiological functions in man while performing physical work, by R. L. Rabinovich
Beta radioactivity of Lugansk oblast waters, by G. S. Gan and P. F. Tashchi
Changes in cortical and subcortical reactions in children during mental fatigue and its elimination by cold agents and physical exercise, by Yu. M. Pratusevich and L. N. Shustruiskaya.

MEDICAL RADIOLOGY, 1962, VOL. 7, NO. 11: [SELECTED] ARTICLES. 31 Jan 63 [58]p. 70 refs. JPRS: 17402.
Order from OTS $1.50 63-21030

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 11, p 23-31, 39-53, 65-73, 83-85, 92-94.

DESCRIPTORS: *Radiobiology, *Radiation tolerance, Personnel, Diagnosis, Radioactive isotopes, Diseases, Iodine, *Thyroid gland, Poisoning, Countermeasures, *Blood, Pathology, *Radiation sickness, Skin, X-rays, Radiation damage, *Eye, *Analyzers (Psychology), *Bone marrow, Transplantation, Tissues (Biology), Spleen, Conferences, *Radioprotective drugs.

Contents:
Organization of work and norms for the work-load of personnel engaged in the diagnosis and treatment of diseases of the thyroid gland by radioactive iodine, by V. Kh. Frenkel'
First aid in radioactive iodine poisoning, by V. P. Borisov
Changes in peripheral blood during radiation therapy, by E. V. Karibskaya and T. E. Matetskaya
Early changes in the skin chronaxy and visual analysors in persons exposed to a single local X-ray treatment, by A. S. Efimova
Luminescent-microscopic evaluation of the blood and bone marrow during X-ray irradiation by V. A. Kolpakov and M. M. Popov
Treatment of radiation sickness by homoplantation of fresh and preserved spleen, by V. A. Revis
Experimental effect of several pharmacopeial preparations on radiation sickness, by A. V. Shubina
Scientific Conference on Recovery from Radiation Injuries, May 62, by O. V. Popov.

PROBLEMS OF RADIOBIOLOGY, 1956, VOL. 1. 1962, 363p. PL-480 HEW.
Order from OTS $3.50 61-31015

Trans. of Voprosy Radiobiologii (USSR) 1956, v. 1.

DESCRIPTORS: *Radiobiology, Radiation effects, Dogs, X-rays, Conditioned reflex, *Radon, Dosage, *Convulsions, Nerves, Brain, Spinal cord, *Nervous system, Pathology, *Melanin, Cells (Biology), *Edema, *Metabolism, Muscles, *Tissues (Biology), *Respiration, Heat production, Biochemistry, *Adenosine phosphates, *Creatinine, Permeability, Sensitivity, *Embryos, Reproductive system, Pituitary hormones, *Serum, Cytochemistry, Adaptation (Physiology), *Proteins, Antigens, Antibodies, Nucleoproteins, Tumors, Cancer, Nucleic acids, *Blood sugar, *Carbohydrates, *Medical equipment, *Radiation therapy, Dosimeters.

Contents:
Changes in conditioned reflex activity in dogs following X-ray irradiation of the body, by P. I. Lomonos
Relation between the strength of a radon preparation and the time of onset of various phases of convulsive state in the frog, by E. I. Bakin
The significance of the afferent nervous system in the development and course of radiation-induced convulsive state in the frog, by E. I Bakin
The sequence of functional disorders in the CNS of frogs following exposure of the brain to radon, by O. S. Il'ina
Changes in the shedding process, reaction of melanophores, and edematous states in frogs following exposure of the CNS to penetrating radiation (radon) by O. S. Il'ina
Effect of the brain irradiated with radon upon the function of the lower parts of the CNS and other systems, by O. S. Il'ina
Change in metabolic rate of oxidative processes of muscle tissue induced by the combined action of large doses of radon and direct electric current, by Z. I. Shitova
Change in respiration of an isolated muscle after irradiation with radon at low temperatures, by Z. I. Shitova
Effect of radon irradiation on respiration of an isolated frog muscle, by V. A. Muzheev and Z. I. Shitova
Effect of radon irradiation on heat formation in the isolated resting muscle of the frog, by V. A. Muzheev
Change in the adenosine triphosphoric acid and creatine phosphate content of frog muscles under the influence of radon irradiation, by V. A. Muzheev
Effect of radon irradiation on the functional properties of nerve and muscle, by V. A. Muzheev
The role of the nervous system in changes of tissue permeability following irradiation, by P. N. Kiselev
Change in contractile ability of an isolated frog muscle under the influence of radon irradiation, by Z. I. Shitova
Selective action of X-rays on various parts of the body, by N. K. Shmidt
Local effect of X-rays, by G. S. Strelin and others
Sensitivity of amphibian embryos at various stage of development, by V. A. Blinov
Sensitivity of normal and X-ray irradiated sex organs to the gonadotropic hormone of the anterior pituitary lobe, by L. A. Kashchenko and A. D. Pushnitsyna
Changes in the activity of the gonadotropic factor of the anterior pituitary under the influence of radiation, by L. A. Kashchenko
Changes in tissue permeability under the influence of X-rays, by P. N. Kiselev
The effect of certain substances in lowering the permeability of irradiated tissues, by P. N. Kiselev and P. A. Buzini
Effect of X-rays on the serology of normal tissues and inflammatory foci, by P. N. Kiselev and P. A. Buzini
Effect of radiation energy on protein antigens and antibodies, by E. L. Remennikova
Effect of radiation on the antigenic structure of the bacterial cell, by A. I. Nevler
Nucleoproteins as a substrate of the biological action of penetrating radiation, by L. F. Larionov
Cytochemical investigations of nucleoproteins in lip

carcinoma during radiotherapy, by L. F. Larionov and A. V. Kantin

Histochemical investigation of changes in nucleoproteins of normal animal tissues and of tumors after X-ray irradiation, by L. S. Semenov

Biochemical changes in nucleoproteins of malignant tumors under the influence of X-rays, by L. F. Larionov and others

Early changes in tissue culture cells under the influence of X-rays (based on fluorescence microscope data) by M. N. Meisel' and T. M. Kondrat'eva

Cytophysiological changes following irradiation in tumor cells grown in tissue culture, by S. N. Aleksandrov

Effect of DNA depolymerase on living and dead cells in tissue cultures, by S. N. Aleksandrov and M. A. Presnov

Change in the sugar content of outflow blood from brain and muscles, following total irradiation of dogs with X-rays, by R. Ya. Keilina

Changes in carbohydrate metabolism of animals following total X-ray irradiation, by B. M. Graevskaya and R. Ya. Keilina

Development of Russian medical radiology before the Great October Socialist Revolution (contributions to the history of Soviet medical radiology), by M. N. Pobedinskii

A teleradiotherapy machine and its calibration, by V. A. Petrov

Slide rules for γ-ray dose calculations, by V. A. Petrov

A source calibrator, by V. A. Petrov and Z. P. Balon

A mobile X-ray therapy machine, by V. A. Petrov

RADIOBIOLOGY, 1961, VOL. 1, NO. 4. Dec 62, 267p.
Order from OTS $3.50 AEC-tr-5425

Trans. of Radiobiologiya (USSR) 1961, v. 1, no. 4, p. 465-[635].

DESCRIPTORS: *Radiobiology, *Mitosis, Radiation effects, Ribonucleic acids, Escherichia, Gamma rays, *Plutonium, Skeleton, Liver, *Excretion, X-rays, Vitamin B complex, Animals, Insulin, Adaptation (Physiology), *Metabolism, Nucleic acids, *Fast neutrons, *Radiation sickness, *Radioactive isotopes, Radioprotective drugs, Chelate compounds, *Complex compounds, *Placenta, Permeability, Barriers (Physiology), *Embryos, Caffeine, Urine, *Cerebral cortex, *Thalamus, Genetics, Body fluids, Blood vessels, Ascorbic acid, *Acetylcholines, *Brain, Catalase, Transplantation, Stomach, Lungs, *Electron microscopy, Age factors, *Adrenal cortex, *Strontium, Antibiotics, Immunity, Anthrax, Mutations, Radiation tolerance, Plants, Ultraviolet radiation, Wheat, Tomatoes, Calorimeters, Dosimeters, Beta particles.

Contents:

On the ocassion of the 22nd Congress of the CPSU

Reaction of mechanisms regulating mitotic activity to radiation, by A. D. Strzhizhovskii

Study of changes of DNA in Escherichia Coli upon gamma irradiation, by A. M. Kuzin and others

Action of X-rays upon deoxyribonucleoprotein of Escherichia Coli in vitro and in vivo, by E. V. Moiseenko

Distribution of plutonium-239 in the skeleton and liver of rats and kinetics of its elimination depending on the dose and rhythm of introduction of the isotope, by L. A. Buldakov and Yu. I. Moskalev

Effect of X irradiation upon synthesis of vitamin B_{12} complex by bacteria, by L. A. Selivestrova

Comparative study of the changes of natural resistance of irradiated animals to bacterial exo- and endotoxins, by D. R. Kaulen

Insulin inactivating properties of the liver of irradiated rats, by E. R. Bagramyan

Elimination of dische compounds from the organism upon irradiation with fast neutrons and gamma rays, by E. F. Romantsev

Acceleration of the elimination of radioactive isotopes of yttrium and cerium (Y^{91} and Ce^{144}) from the rat organism by means of new complexones, by N. O. Razumovskii and others

Effect of X-rays upon phosphorus passage through placental and histohematic barriers in the fetus, by G. V. Nizhnik and L. D. Luk'yanova

Excretion of Xanthine and Hypoxanthine with urine in rabbits after irradiation, by T. N. Rysina

Dependence of the sensitivity of nuclear apparatus of mammals to small doses of ionizing radiation upon the genotype of animals, by Yu. Ya. Kerkis and G. M. Ronichevskaya

Effect of destruction of reticular formation of the mesencephalon and hypothalamus upon bio-electric reactions of the cerebral cortex during acute radiation sickness, by G. V. Izosimov

Effect of radiation-induced humoral toxic agents upon blood vessels, by A. G. Sverdlov

Ascorbic acid metabolism in the wall of blood vessels of monkeys exposed to injury by ionizing radiation, by L. I. Polikarpova

Acetylcholine metabolism in the thalamic region of the brain of dogs after acute radiation sickness, by B. I. Davydov

Radiosensitivity of hypocatalase guinea pigs, by G. Rusev and others

Comparative evaluation of results of auto- and homotransplantation treatment of penetration defect of stomach during radiation sickness in an experiment, by N. V. Stankevich

Electron-microscopic investigation of lungs during chronic radiation sickness induced by radioactive strontium, by A. A. Gorodetskii and others

Influence of age factor on changes of adrenal cortex after whole-body X irradiation, by I. D. Nasledova

Radioresistance of escherichia coli resistant to antibiotics, by V. D. Zhestyanikov

On the immunity to anthrax upon exposure of organism to ionizing radiation, by E. I. Silant'ev and others

Importance of immunological investigations for the study of pathogenesis of acute radiation sickness, by R. N. Klemparskaya and R. V. Petrov

On the prophylactic use of ultraviolet rays for ionizing irradiation, by T. S. Stepanova

Theoretical bases of the method of presowing irradiation of seeds, by A. M. Kuzin

Development of economically promising matants of winter wheat under the effect of gamma irradiation, by V. S. Mozhaeva

Cytological analysis of the causes of radioresistance of plants, by V. V. Khvostova and L. V. Nevzgodina

Effect of irradiation of wheat seed endosperm upon mitotic activity of cells of radicles, by L. M. Fonshtein and L. P. Chel'tsova

Experimental mutations in tomatoes, by M. I. Kulik

Differential calorimeter for measuring activity and mean energy of beta particles of liquid and powdery radioactive preparations, by V. I. Drobot and Yu. M. Shtukkenberg

Integral condenser dosimeter (DIK) by A. V. Bibergal' and Yu. P. Nikulin

Presowing gamma irradiation of seeds of agricultural crops, by A. M. Kuzin and N. M. Berezina.

RADIOBIOLOGY, 1961, VOL. 1, NO. 4: SELECTED ARTICLES. 26 Dec 62 [45]p. 99 refs. FTD-TT-62-1316
Order from OTS or SLA $4.60 63-15291

Unedited rough draft trans. of Radiobiologiya (USSR) 1961, v. 1, no. 4, p. 535-542, 550-554, 583-590.

DESCRIPTORS: Radiobiology, *Reticuloendothelial system, *Radiation sickness, Cerebral cortex, *Bioelectronics, *Thalamus, *Acetylcholines, *Metabolism, Pathology, Etiology, Immunology.

Contents:
Destruction of the recticular structures in the mesencephalon and hypothalamus and its effect on bioelectrical reactions of the cortex in acute radiation sickness, by G. V. Izosimov
Acetylcholine metabolism in the thalamic region of the brains of dogs which have undergone acute radiation sickness, by B. I. Davydov
The value of immunological investigations in studying the pathogenesis of acute radiation sickness, by N. N. Klemparskaya and R. V. Petrov.

RADIOBIOLOGY, 1961, VOL. 1, NO. 6. Dec 62, 244p.
Order from OTS $3.50 AEC-tr-5427

Trans. of Radiobiologiya (USSR) 1961, v. 1, no. 6, p. 815-969.

DESCRIPTORS: *Radiobiology, *Cancer, Proteins, *Radiation effects, X-rays, *Liver, Gamma rays, *Nucleoproteins, Enzymes, Ultraviolet radiation, Yeasts, *Fluorescence, Blood, Radiation sickness, *Thymus gland, Plants, *Cholinesterase, Acetylcholines, Tissues (Biology), *Lymphatic system, *Metabolism, Water, Salts, Bone, Density, *Cells (Biology), Anemia, *Hormones, *Bone marrow, Oxidation, Epinephrine, *Cysteinamines, Antigens, *Adrenal glands, Polonium, Neutrons, *Spleen, Nervous system, *Thalamus, Ear, *Adrenal cortex, Behavior, Cerebral cortex, Radiation tolerance, Ganglia, Mitosis, Nucleic acids, *Radioprotective drugs, Pregnancy, Cobalt, *Seeds, *Fertility, Dosage, Physiology.

Contents:
Congress of the CPSU (no. 22) and the tasks of this journal.
Some problems of present-day radiobiology related to the radiation therapy of malignant neoplasms, by N. I. Shapiro
Application of the high-frequency electrical conductivity method for the study of adsorption properties of irradiated proteins, by V. K. Tkach and L. A. Frenkel
Effect of whole-body irradiation with X-rays on the soluble proteins of the liver (Electrophoretic separation of the proteins in agar) by A. M. Makhlina
Some causes of the distrubance of enzymatic decomposition of desoxyribonucleoproteins after whole-body irradiation with gamma-rays, by N. V. Ermolaeva
Ultraviolet fluorescence excitation spectra and the intensity of fluorescence of irradiated yeast, by N. A. Pomoshchnikova and L. S. Agroskin
Effect of X-ray irradiation in vitro on the intensity of ultraviolet fluorescence of blood cells of the peripheral blood of rats, by G. M. Barenboim and others
Importance of toxic factors in the pathogenesis of radiation sickness, by L. A. Buldakov and others
Effect of extracts from irradiated Vicia faba leaves on the incorporation of P^{32} into isolated nuclei on thymus cells, by A. M. Kuzin and others
Early changes in cholinesterase activity and in the content of acetylcholine in some tissues of rats subjected to lethal gamma-irradiation, by N. V. Korneeva
The activity of acetylcholinesterase and the histopathology of lymphadenoid tissue in acute radiation sickness, by I. S. Gavrilenko
Problem of changes in the water-salt metabolism of dogs which have been treated with radioactive substances, by Z. I. Poluboyarinova
Inorganic metabolism in the bone tissue of rabbits during recurrent irradiation with gamma-rays, by N. I. Elkina
Effect of the density of the cell suspension on the radiation sensitivity of yeast, by S. I. Alekseeva and others
Concerning the problem of the development of anemia in remote periods after a single irradiation with X-rays, by G. V. Voskoboinikov and N. I. Shmeleva
An attempt to affect by means of hormones the fate of bone marrow cells grafted into irradiated animals, by Yu. M. Zaretskaya
Content of adrenalin and products of its oxidation in the vascular tissue of guinea pigs after exposure to ionizing radiation, by L. I. Polikarpova
Effect of cystamine on endogenous tissue respiration, by S. P. Yarmonenko
Problem of the specificity of changes in the antigenic properties of tissues upon action of ionizing radiation, by A. G. Sverdlov
Changes in the content of adrenalin, noradrenalin, and products of their oxidation in the blood and suprarenals of rats under the effect of injury produced by polonium and irradiation with X-rays, by E. N. Petrovnina
Effect of neutron irradiation on the spleen of white mice, by A. F. Ivanitskaya and V. I. Boikova
Changes in the carbohydrate and energy metabolism of the central nervous system induced by irradiation with X-rays or with gamma-rays from a Co^{60} source, by L. S. Cherkasova
Functioning of the suprarenal cortex in dogs that survived the acute radiation syndrome, by E. N. Antipenko
Analysis of the action of the hypothalamus on labyrinth tonic reflexes after irradiation, by Z. A. Yanson
Behavior of mice in a gamma-radiation field, by V. G. Khrushchev and others
Problem of the participation of subcortical ganglionic formations in the bioelectric reactions of the cerebral cortex during acute radiation sickness, by G. V. Izosimov
Cell division and nucleic acid metabolism of the mucosa of the small intestine in an organism subjected to the action of substances protecting against radiation, by L. F. Semenov and others
Some data on the protection of the organism from the action of ionizing radiation during the period of prenatal development, by N. A. Kalinina
Effect of gamma-irradiation with Co^{60} in relation to the conditions under which plants were grown from seeds and to the duration of storage of these seeds and the effect of irradiation on the fertility of the offspring, by B. N. Kulikov

Problems pertaining to the action of small doses of ionizing radiation on physiological functions, by Yu. G. Grigor'ev
Work of the radiobiology section of the first Biophysics Congress, by A. M. Kuzin

STUDY OF RADIATION SICKNESS. 21 Jan 63 [12]p. 4 refs. JPRS: 17202.
Order from OTS or SLA $1.60 63-15396

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1962, v. 6, no. 5, p. 60-63 and 74-75.

DESCRIPTORS: *Radiation sickness, Inhibition, *Radiation therapy, Drugs, Pentothal sodium, Barbiturates, *CNS depressants, Accleration tolerance.

Contents:
A comparison of the central depressing action of medinal, barbamil, and thiopental during acute radiation sickness in rats and rabbits, by M. Dostal and others
The effect of accelerations created at the moment of irradiation of animals on the course of acute radiation sickness, by K. V. Ivanov and others.

Aeberhardt, Andre.
CONTRIBUTION TO THE STUDY OF THE METABOLISM OF FISSION PRODUCTS: RESEARCH ON THE PHYSICO-CHEMICAL STATE AND THE METABOLIC PATH OF RADIOCERIUM SOLUTIONS (Contribution à l'Étude de Métabolisme des Produits de Fission: Recherches sur l'État Physico-Chimique et le Devenir Métabolique des Solutions de Radiocerium). Doctoral thesis, Paris U. (France). Oct 62, 119p. 64 refs.
Order from OTS $1.50 AEC-tr-5242

Trans. of C[ommissariat à l'É[nergie] A[tomique] (France) no. 1856, 1961.

DESCRIPTORS: *Metabolism, *Fission products, Physical chemistry, *Radioactive isotopes, *Cerium, Solutions, *Colloids, Blood, Distribution, Dynamics, Salts, *Hydrogen ion concentration, Radiation effects.

Contents:
Review of certain chemical and physical properties of cerium
Metabolism of cerium 144 without carrier in animals
Physical chemistry of carrier-free cerium 144 solutions
Method of transport of carrier-free cerium 144 in the blood
Application: Initial cerium distribution in rats after intravenous injection

Balabukha, V. S. and Fradkin, G. E.
ACCUMULATION OF RADIOACTIVE ELEMENTS IN THE BODY AND THEIR EXCRETION. Oct 62, 160p. 179 refs.
Order from OTS $2.75 AEC-tr-5236

Trans. of mono. Nakoplenie Radioaktivnykh Elementov v Organizme i Ikh Vyvedenie, Moscow, 1958.
##Another trans. of p. 44-85 is available from OTS or SLA $4.60 as 60-11194, JPRS(NY)-L-1169, 26 Jan 60, 42p.

DESCRIPTORS: *Radiobiology, Radioactive isotopes, Storage, *Excretion, *Complex compounds, Metabolism, Chemical reactions, Strontium, Yttrium, Plutonium, *Bones, Radiation effects, *Radioprotective drugs, Ethylenedinitrilo tetracetates.

Contents:
The behavior of radioisotopes in the organism
##Acceleration of the elimination of radioactive isotopes from the organism by the action of complex-forming agents
Radioactive strontium
Radioactive yttrium
Plutonium
Brief information concerning the behavior of other osteotropic radioactive isotopes in the organism.

Lebedinskii, A. V., ed.
SOVIET SCIENTISTS ON THE HAZARDS OF NUCLEAR ARMS TESTING. [1961] [154]p.
Order from OTS or SLA $11.50 UCRL Trans-549

Trans. of mono. [Sovetskie Uchenye ob Opasnosti Ispytanii Yadernogo Oruzhie] Moscow, 1959 [116p.]. Another trans. is available from OTS or SLA $9.60 as 59-11547, JPRS (DC)-719, 14 May 59, 110p.

DESCRIPTORS: *Nuclear weapons tests, Hazards, *Radioactive fallout, Radiological contamination, Strontium, Carbon, Radioactive isotopes, Plants, Animals, *Radiobiology, Genetics, *Radiation effects, Nuclear explosions.

For abstract see Technical Translations 2: 17, 1959.

Loshak, A. Ya.
HYGIENIC EVALUATION OF RADIOACTIVE IODINE ACCUMULATION IN FRESH-WATER FISH (YEARLING CARPS) (K Gigienicheskoi Otsenke Nakopleniya Radioaktivnogo Ioda Presnovodnymi Rybami (Karpami-Godovikami)). 8 Oct 62, 7p. 6 refs. Trans. A-1365.
Order from OTS or SLA $1.10 62-33563

Trans. of Gigiena i Sanitariya (USSR) 1962, v. 27, no. 6, p. 93-95.

DESCRIPTORS: *Radioactive isotopes, *Iodine, *Fishes, Absorption, Water, Food, Radiological contamination, Hydraulic reservoirs.

Sondak, V. A., El'piner, I. E. and others.
BIOPHYSICS: PROTECTIVE EFFECT OF PHYTOLIPOPOLYSACCHARIDES AND VB-2 AGAINST IRRADIATION [AND] ON THE SELECTIVE EFFECT OF ULTRASONIC WAVES ON THE MOLECULAR STRUCTURE OF INSULIN. 22 Jan 63 [16]p. 26 refs. JPRS: 17239.
Order from OTS or SLA $1.60 63-15361

Trans. of Akademiya Nauk SSSR. Doklady, 1962, [v. 146] no. 4, p. 925-932.

DESCRIPTORS: *Biophysics, *Radioprotective agents, *Lipids, *Polysaccharides, Tea, *Vinyl radicals, *Butyl radicals, Ethers, *Ultrasonic radiation, Radiation effects, Proteins, Hormones, *Insulin, *Molecular structure, *Amino acids, Chromatographic analysis, Gases, Oxygen, Hydrogen, Argon.

Uteshev, A. B.
EFFECT OF WHOLE-BODY X-IRRADIATION ON IRON METABOLISM IN ANIMALS. 22 Sep 61, 7p. 19 refs.
Order from OTS or SLA $1.10 AEC-tr-5354

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1962, v. 34, no. 3, p. 371-378.

DESCRIPTORS: *Radiation effects, X-rays, *Iron, *Metabolism, Animals, Liver, Spleen, *Radiation sickness, Bone marrow, Kidneys, Brain, Muscles, Anemia, *Blood.

Changes in the concentration of iron in the organs and tissues of irradiated animals are wavelike in nature. They correspond to fluctuations in the arteriovenous difference. The amount of iron in the liver and spleen in radiation sickness increases at the same time that it decreases in bone marrow throughout the entire period of observation. By the fourteenth day the iron content of the kidneys, brain, and muscle increases; it decreases toward the end of the third week after irradiation. On the third day after irradiation all the organs release iron into the blood flowing through them. This release subsequently decreases or gives way to retention. Evidence of the profound disruption of iron metabolism and anemia arising in dogs as a result of irradiation is found in the decrease in total iron content of the blood on the third day after irradiation and in the increase in plasma iron on the third, seventh, and fourteenth days and increase in the "readily split off" iron of arterial blood on the third and seventh days after irradiation. (Author)

Zoology

WORKS OF THE INSTITUTE OF OCEANOGRAPHY AND FISHERIES: SELECTED ARTICLES. 1962, 112p. 105 refs. PL-480 Int.
Order from OTS $1.00 60-21658

Trans. from Institut za Okeanografiju i Ribarstvo. Godisnjak (Yugoslavia) 1938, v. 1; 1939/40, v. 2, p. 26-44; Institut za Okeanografiju i i Ribarstvo. Izvjesca (Yugoslavia) 1954, v. 4, no. 4C.

DESCRIPTORS: *Oceanography, Fisheries, *Food, *Fishes, Morphology, Reproduction, Feeding, Adriatic sea, Marine biology, Growth, Statistical data.

Contents:
The food of sardines (Clupea pilchardus Walb.) in the stage of metamorphosis, by A. Ercegovic
The spawning and spawning areas of the sardine (Sardina Pilchardus Walb.) in the Adriatic Sea from 1947-50, by T. Gamulin
The importance of fishery statistics for the study of marine fishery biology, with special regard to the Adriatic sardine, by A. Kotthaus.

ZOOLOGICAL JOURNAL, 1962, VOL. 41, NO. 12: SELECTED TRANSLATIONS. 7 Feb 63 [47]p. 33 refs. JPRS: 17528.
Order from OTS $1.25 63-21076

Trans. of Zoologicheskii Zhurnal (USSR) 1962, v. 41, no. 12, p. 1771-1782, 1848-1858, 1875-1882.

DESCRIPTORS: *Marine biology, *Fisheries, Industrial production, Aquatic animals, *Cetacea, Markers, Distribution, Age, Growth, *Seals (Zoology), Population.

Contents:
Development of the fishing industry, fishing and problems of biological science in the light of the resolutions of the Congress of the CPSU (no. 22) by G. B Mel'nikov and N. E. Sal'nikov
Marking of humpback whales in the Southern Hemisphere, by M. V. Ivashin
Evaluation of a method of taking the census of the White Sea harp seal and consideration of the status of the stocks of this seal, by Yu. I. Nazarenko and A. V. Yablokov.

[Rubtsov, I. A.
CONFERENCE ON THE PROBLEMS OF THE BIOLOGICAL METHOD OF CONTROLLING PESTS. 22 Sep 58 [7]p. JPRS (NY)-L-326.
Order from OTS or SLA $1.60 PB 141234 T

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1957 [v. 22] no. 6, p. 770-772.

DESCRIPTORS: Conferences, *Pest control, Biology, *Insects, Ecology, Parasites, Genetics.

Savilov, A. I.
DISTRIBUTION OF THE ECOLOGICAL FORMS OF SAILFISH (SALLEEMEN VELELLA LATA CH, AND EYS) AND PORTUGESE MEN-OF-WAR (PHYSALIA UTRICULUS) (LA MARTINIERE) ESCH) IN THE NORTHERN PACIFIC. 1 Feb 63 [24]p. 18 refs. JPRS: 17431.
Order from OTS $0.75 63-21042

Trans. of [Akademiya Nauk SSSR]. Institut Okeanologii. Trudy, 1961, v. 45, p. 223-239.

DESCRIPTORS: *Marine biology, *Aquatic animals, *Morphology, Ecology, Pacific Ocean, Fishes.

Vainshtein, B. A.
THE CRITERIA OF TAXONOMIC CATEGORIES. 28 Jan 63 [9]p. 8 refs. JPRS: 17316.
Order from OTS or SLA $1.10 63-15376

Trans. of Zoologicheskii Zhurnal (USSR) 1960, v. 39, no. 12, p. 1774-1778.

DESCRIPTORS: *Animals, *Arthropods, Classification, Standards.

CHEMISTRY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 57 (CHEMISTRY SERIES). 24 Jan 63 [14]p. JPRS: 17283.
Order from OTS or SLA $1.60 63-15368

Abstract trans. of Srpsko Hemisko Drustvo, Belgrad. Glasnik (Yugoslavia) 1960/61, v. 25/26, nos. 8-10, p. 411-425, 427-463, 465-475, 477-507, 509-525, 527-529, 531-537, 539-557, 559-570.

DESCRIPTORS: *Abstracts, Bibliography, Chemistry, *Physical chemistry, *Chemical analysis, Elementary particles, Electrochemistry, Metallurgy, Glass, Minerals, Organic compounds, Biochemistry, Textiles.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 63 (CHEMISTRY SERIES). 31 Jan 63 [9]p. JPRS: 17393.
Order from OTS $0.50 63-21026

Abstract trans. of Revista de Chimie (Rumania) 1962, v. 13, no. 9, p. 513-554, 557-558.

DESCRIPTORS: *Abstracts, Bibliography, *Chemistry, Herbicides, Fertilizers, Plastics, Pyrolysis, Chemical analysis, Ores, Soils, Drugs.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 66 (CHEMISTRY SERIES). 1 Feb 63 [16]p. JPRS: 17427.
Order from OTS $0.50 63-21038

Consists of abstracts of articles from the scientific and technical journals of East Germany and Hungary.

DESCRIPTORS: *Abstracts, Bibliography, Chemistry, *Chemical analysis, Catalysts, Metalorganic compounds, *Physical chemistry, Complex compounds, *Tracer studies, *Biochemistry, Organic compounds, Ion exchange, *East Germany, *Hungary.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 73 (CHEMISTRY SERIES). 6 Feb 63 [35]p. JPRS: 17509.
Order from OTS $1.00 63-21066

Consists of abstracts of articles from the scientific and technical journals of East Germany and Hungary.

DESCRIPTORS: *Abstracts, Bibliography, Chemistry, *Radiochemistry, Tracer studies, Counting methods, *Glass, Concrete, *Physical chemistry, Chemical reactions, Complex compounds, Electrochemistry, *Solid state physics, Reaction kinetics, *Chemical analysis, *Spectroscopy, Metals, Ores, *East Germany *Hungary.

GENERAL MEETING OF THE DEPARTMENT OF CHEMICAL SCIENCES OF THE ACADEMY OF SCIENCES OF THE USSR, 22-23 MAY 62, 24 Jan 63 [10]p. JPRS: 17270.
Order from OTS or SLA $1.10 63-15358

Trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1962, no. 10, p. 1896-1899.

DESCRIPTORS: Conferences, Chemistry, *Mass spectroscopy, Reports, Abstracts.

The meeting was devoted to the use of mass spectrometry in chemistry. Summaries are given of 9 of the papers.

ORGANOSILICON AND ORGANOMETALLIC COMPOUNDS: ANNOTATED BIBLIOGRAPHY BASED ON SOVIET OPEN LITERATURE, 1958-Sep 62. Preliminary [rept.] Prepared in response to AID Work Assignment no. 41, Task 7. 31 Dec 62 [60]p. 181 refs. AID rept. 62-196.
Order from OTS or SLA $5.60 63-13874

DESCRIPTORS: *Bibliography, *Silicon compounds, Organic compounds, Halides, Oxides, Nitrogen compounds, *Metalorganic compounds, *Magnesium compounds, *Germanium compounds, *Lithium compounds, *Sodium compounds, *Potassium compounds.

Contents:
Organosilicon compounds
Organomagnesium compounds
Organogermanium compounds
Organolithium compounds
Organosodium and organopotassium compounds.

Karnojitzky, V. J.
AUTOXIDATION INHIBITORS. [Feb 63] 11p.
Order from ATS $15.75 ATS-65P64F

Trans. of Génie Chim[ique] (France) 1962, v. 87, no. 4, p. 108-113.

DESCRIPTORS: Oxidation, Inhibition, *Oxidation inhibitors.

Petrov, K. A., Bliznyuk, N. K., and Mansurov, I. Yu.
REACTIONS OF ACID PHOSPHITES, THIOPHOSPHITES, PHOSPHONATES AND DIALKYLPHOSPHINE OXIDES WITH DISULFIDES. [1962] 5p.
Order from ATS $8.50 ATS-19P63R

Trans. of mono. Khim[iya] i Primenenie Fosfororgan[icheskikh] Soedin[enii] (Akad. Nauk SSSR, Kazansk. Filial, tr. Konf. (no. 2) 1959) [Moscow] 1962, p. 121-124.
A complete trans. of mono. is available from OTS or SLA $38.50 as 62-33349, JPRS-15432, 25 Sep 62 [1160]p.

DESCRIPTORS: *Phosphorus compounds, *Phosphites, Thio radicals, *Phosphonic acids, Salts, *Phosphine oxides, Alkyl radicals, *Sulfides, Chemical reactions.

Robinson, R.
A THEORY CONCERNING THE ORIGIN OF PETROLEUM. [Feb 63] 2p.
Order from ATS $3.00 ATS-59P65G

Trans. of Angew[andte] Chem[ie] (West Germany) 1962, v. 74, no. 14, p. 508-509.

DESCRIPTORS: *Petroleum, Synthesis, Theory.

Toropova, V. F., Saikina, M. K., and Lutskaya, N. K.
MERCURY AND SILVER COMPOUNDS WITH DIETHYLTHIOPHOSPHATES. [1962] 9p. 13 refs.
Order from OTS or SLA $1.10 AEC-tr-4936

Trans. of #Zhurnal Neorganicheskoi Khimii (USSR) 1961, v. 6, no. 9, p. 2086-2090.

DESCRIPTORS: *Complex compounds, *Mercury compounds, *Silver compounds, *Metalorganic compounds, Ethyl radicals, Thio radicals, *Phosphates, Polarographic analysis, Chemical reactions, Reaction kinetics.

Using polarographic and potentiometric methods, complex compounds of mercury with diethylthiophosphates have been studied. The instability complexes of the following constants were determined (pK_2 = 20.1, pK_3 = 22.6, pK_4 = 23.5). The stability of the diethylthiophosphate silver-complex was studied AgA^{2-}_3 (pK_3 = 10.81). It was shown that the stability of a number of sulfur containing complexes of mercury and silver depends on the oxidizing - reduction properties of the addend; the coordination of diethylthiophosphate through an atom was hypothesized.

Analytical Chemistry

Baumler, J., and Rippstein, S.
THIN-LAYER CHROMATOGRAPHIC DETECTION OF INSECTICIDES. [Feb 63] 3p.
Order from ATS $4.50 ATS-58P66G

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1961, v. 44, p. 1162-1164.

DESCRIPTORS: *Insecticides, Detection, Chromatographic analysis.

Beldowicz, M., Grynberg, H., and Szczepanska, H.
DETERMINATION OF THE FATTY ACIDS OCCURRING IN PAPER CHROMATOGRAMS AS "CRITICAL PAIRS" (Oznaczanie Kwasow Tluszczowych Wystepujacych na Chromatogramie Bibulowym Jako "Pary Krytyczne") tr. by W. Kulerski. 1962 [14]p. 21 refs. PL-480 Agr.
Order from OTS $0.50 61-11369

Trans. of Prace Instytutow i Laboratoriow Badawczych Przemyslu Spozywczego (Poland) 1960, v. 10, no. 2, p. 69-83.

DESCRIPTORS: *Fatty acids, Oils, Separation, *Quantitative analysis, *Paper chromatography.

Our investigations have confirmed chromatography with prior hydrogenation as a method useful in separating critical pairs. Our modification enables quantitative analysis for fatty acids to be applied to rape seed oil, which is difficult to hydrogenate, as well as to other oils. When this method is applied, it will be possible to determine the full fatty acid patterns of natural oils. (Author)

Busev, A. I., Fan, C., and Kuzyaeva, Z. P.
SODIUM p-(MERCAPTOACETAMIDO) BENZENESULFONATE AS A REAGENT FOR MOLYBDENUM. [1962] 5p.
Order from ATS $7.00 ATS-11P66R

Trans. of Moscow U. Vestn[ik]. Ser[iya] 2: Khim[iya] (USSR) 1962, v. 17, no. 4, p. 43-47.

DESCRIPTORS: *Molybdenum, Reagents, *Sodium compounds, Thiol radicals, Amides, Benzenes, *Sulfonates.

Exner, F.
THE COMPLIANCE WITH RULES OF THE BEHAVIOR OF ODOROUS SUBSTANCES. [1962] 17p. 16 refs.
Order from SLA $1.60 62-20041

Trans. of Parfümerie und Kosmetik (West Germany) 1962, v. 43, no. 4, p. 111-118.

DESCRIPTORS: *Odors, Chemical properties, Physical properties, *Molecular structure, *Sensory perception.

In some fields of perfume chemistry it is possible to set up by analogy inference rules governing the presumable odour of chemically related compounds; such rules allow an approximated prediction of an odour. There are series of chemically similar compounds where only part of the whole complex "odour" is changed from one member to the next. Groups having a rather characteristic scent can even impart this specific scent to a bigger molecule. The author discusses the "regular" behaviour of the so called "active odoriferous groups" on the basis of examples and correlates the findings with theoretical ideas. It is presumed that the formation of a typical scent does not exclusively depend on the shape of the molecule as a whole but that it can be influenced even by certain molecule sectors. This fact would enable an explication of the particular odoriferous qualities of the active odoriferous groups. (Author)

Funakubo, E., Taniguchi, H., and Uejima, A.
THE ANALYTICAL SEPARATION OF HYDROCARBONS BY THE FIA (FLUORESCENCE-INDICATOR-ADSORPTION ANALYSIS) METHOD, PT. 1: DERIVATION OF FUNDAMENTAL RELATIONSHIPS. [Feb 63] 8p.
Order from ATS $10.50 ATS-53P66G

Trans. of Brennstoff-Chem[ie] (West Germany) 1962, v. 43, no. 9, p. 260-263.

DESCRIPTORS: *Hydrocarbons, Chemical analysis, Separation, *Fluorescence, *Chemical indicators, Adsorption.

Funakubo, E., Taniguchi, H., and Uejima, A.
THE ANALYTICAL SEPARATION OF HYDROCARBONS BY THE FIA (FLUORESCENCE-INDICATOR-ADSORPTION ANALYSIS) METHOD, PT. 2: EXPERIMENTAL VERIFICATION OF THE FUNDAMENTAL RELATIONSHIPS DERIVED. [Feb 63] 13p.
Order from ATS $13.95 ATS-54P66G

Trans. of Brennstoff-Chem[ie] (West Germany) 1962, v. 43, no. 10, p. 302-308.

DESCRIPTORS: *Hydrocarbons, Chemical analysis, Separation, *Fluorescence, *Chemical indicators, Adsorption.

See also ATS-53P66G .

Gautier, J. A. and Pignard, P.
A BOROTARTRATE COMPLEX AND ITS APPLICATION TO THE MICROCHEMICAL DETERMINATION OF THE BORIC ION. 17 Feb 58, 8p. (figs. omitted) 7 refs.
Available on loan from SLA 63-10627

Trans. of Mikrochimica Acta (Austria) 1951, v. 36/37, p. 793-800.

DESCRIPTORS: *Boron, Determination, Microanalysis, Volumetric analysis, Boron compounds, *Tartrates, *Complex compounds, Barium compounds, Chromates.

In the presence of tartaric acid, borate reacts with barium to produce a precipitate of constant composition and very low water-solubility. The analysis of this presumably complex barium borotartrate yields to empirical formula $Ba_5B_2C_{19}H_8O_{24} \cdot 4H_2O$. The qualitative detection of boron by means of this characteristic precipitate has a limiting concentration of 10^5. A method is described for the gravimetric determination of boron on the semi-micre scale, and also a volumetric method for the micro-determination of boron, which e employs the iodometric measurement of barium as chromate, where 1 ml of 0.01 N thiosulfate solution corresponds to 14.4 F. The principle or this method can be also applied to complex inorganic, organic of biological solutions, after ashing. (Author)

Kitamura, R. and Masuda, F.
MICROGRAVIMETRIC ANALYSIS OF ORGANIC SULFUR COMPOUNDS. (QUANTITATIVE STUDY III). Pt. 17 of Reaction of Organic Sulfur Compounds with Hydrogen Peroxide. [1962] 3p.
Order from ATS $6.00 ATS-67P65J

Trans. of Yakugaku Zasshi (Japan) 1938, v. 58, no. 9, p. 816-818.

DESCRIPTORS: *Gravimetric analysis, Organic compounds, *Sulfur compounds, Hydrogen compounds, *Peroxides.

Miletti, M[ario] and Lamieri, M[assimo].
PRODUCTS CAPABLE OF DECREASING THE TOXICITY OF TOBACCO SMOKE, AND THE TECHNIQUE FOR THEIR USE. IV. CONTROL OF THE PROTECTIVE EFFECT AND ABSORPTION CAPACITY OF SOME COMPOUNDS IN COMMERCIAL USE. [1961] 22p. (2 footnotes omitted) 10 refs.
Order from SLA $2.60 61-16088

Trans. of Chimica (Italy) 1960, v. 36, no. 3, p. 124-133.

DESCRIPTORS: *Toxicity, *Tobacco, Smokes, Cigarettes, *Absorption, Chemical analysis, Inhibition, Nicotine.

The commercial products were investigated in order to determine and to verify their protective efficiency (EP) and their absorbing power (PA). The chemical control of the toxic substances before and after their passage through the products was not attempted. The determination of the values PA and EP can be used for the construction of a suitable table of meteorological standards for the examined products. The values PA and EP show that the advertised efficiency of the products is often nothing more than a form of publicity, and that the products are unable to eliminate from the smoke even one of the many toxic substances. The obtained results, indicate that most of the commercial products offer no protection which the consumer expects. (Author)

Mizuno, T[akashi], Kainuma, S. and others.
THE CARBOHYDRATES OF THE STEM AND THE ROOTS OF THE TOBACCO PLANT. Pt. 3 of A Study of the Carbohydrates of Tobacco. [Feb 61] 16p. 8 refs.
Order from SLA $1.60 62-18833

Trans. of [Nihon Nogei-Kagakkai Shi] (Japan) 1958, v. 32, no. 6, p. 467-470.
Another trans. is available from K-H $20.00 as K-H-10521-b, Feb 61, 16p.

DESCRIPTORS: *Carbohydrates, *Tobacco, *Plants, Polysaccharides, Quantitative analysis, Chemical properties.

Free sugars of the stem and roots of the tobacco plant were identified and their contents determined. Various groups of polysaccharides were isolated and their structural sugars are identified. (Author)

Mizuno, Takashi and Kimpyo, Tadao.
POLYSACCHARIDES OF THE YELLOW-TOBACCO LEAF. Pt. 2 of [A Study of] the Carbohydrates of Tobacco. [1962] 9p. 9 refs.
Order from SLA $1.10 62-18832

Trans. of [Nihon Nogei-Kagakkai Shi] (Japan) 1957, v. 31, p. 830-832.
Another trans. is available from K-H $11.25 as K-H 12138 [1962] 9p.

DESCRIPTORS: *Polysaccharides, *Tobacco, *Plants, Quantitative analysis, Chemical properties, Physical properties.

The green leaves of the Yellow variety tobacco were extracted with hot 80% ethanol to eliminate soluble sugars, pigments, etc. The material insoluble in the solvent was partitioned into polysaccharide fractions soluble in hot 50% ethanol, cold water, hot water, hot 0.5% ammonium oxalate, cold 5% NaOH, hot 5% NaOH, and cold 20% NaOH and some physical and chemical properties of the fractions were determined. Galactose, glucose, arabinose, fructose, galacturonic acid, xylose, rhamnose, ribose and desoxyribose were detected as the component sugars of the polysaccharides. (Author)

Nief, Guy and Roth, Etienne.
A PHENOMENON OF ISOTOPE SEPARATION INDUCED BY PASSING AN ELECTRIC CURRENT INTO A MOLTEN METAL. 15 Dec 58. 3p. 1 ref.
Available on loan from SLA 63-10550

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1954, v. 239, p. 162-164 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Gallium, Stable isotopes, *Isotope separation, Liquid metals, *Electric currents, Capillary tubes.

Obtemperanskaya, S. I., Terent'ev, A. P., and Buzlanova, M. M.
QUANTITATIVE DETERMINATION OF MONOHYDRIC ALCOHOLS BY MEANS OF ACRYLONITRILE. 6 July 62 [5]p. 4 refs.
Order from OTS or SLA $1.10 62-18975

Trans. of #Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1961, v. 16 [no. 3] p. 372-374.

DESCRIPTORS: *Alcohols, Determination, Quantitative analysis, *Acrylonitriles.

Pyriki, C.
NICOTINE CONTENT OF TOBACCO AND OF ITS PRODUCTS FOR SMOKING AS WELL AS ITS FATE DURING SMOKING. [1962] 24p.
Order from K-H $30.00 K-H-3471-b

Trans. of die Pharmazie (Germany) [1955] v. 10, p. 806-812.

DESCRIPTORS: *Tobacco, *Nicotine, Smokes, *Cigarettes, *Pharmacology

Roskin, E. S.
COMPARATIVE DETERMINATION OF THE MOLECULAR WEIGHTS OF POLYACRYLONITRILE BY THE METHODS OF LIGHT SCATTERING AND VISCOSIMETRY (Sravnitel'noe Opredelenie Molekulyarnykh Vesov Polyakrilnitrila Sposobami Svetorasseyaniya i Viskozimetrii) tr. by S. Shewchuck. [1962] 12p. (foreign text included) 6 refs.
Order from OTS or SLA $1.60 UCRL Trans -745 (L)

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Khimiya i Khimicheskaya Tekhnologiya (USSR) 1960, v. 3, no. 4, p. 721-724.
Another trans. is available from OTS or SLA $1.10 as 61-18677 [1961] [7]p.

DESCRIPTORS: *Acrylonitriles, *Molecular weight, Determination, Viscosity, Viscosimeters, Light, Scattering.

For abstract see Technical Translations 6: 739, 1961.

Roth, F. and Schulz, A.
A METHOD FOR THE DETERMINATION OF THE MOISTURE CONTENT IN GASES (Eine Methoden zur Feuchtigkeitsbestimmung in Gase). [1962] [6]p. 4 refs.
Order from SLA $1.10 62-20127

Trans. of Brennstoff-Chemie (Germany) 1939, v. 20, p. 317-319.

DESCRIPTORS: *Gases, *Moisture, Determination, *Volumetric analysis.

After a critical consideration of the current methods of moisture determination of gases, a new method is described which is based on the reaction between magnesium nitride and water resulting in the formation of ammonia, and which makes it possible to carry out sufficiently accurate determinations by titration. The particular virtue of this method, which requires less time, is its independence of any hydrocarbons which might be present in the gas. In the case of gases, which contain ammonia, a simultaneous ammonia determination has to be carried out; but at low ammonia content this is not necessary. Proof analyses are given, and the technique applied in industrial plant analysis is described. (Author)

Scarpati, Maria Luisa; Oriente, Giovanna; and Panizzi, Luigi.
ON THE CAFFEIC CONSTITUENTS IN THE ARTICHOKE. [1962] 5p.
Order from K-H $6.25 K-H-10216

Trans. from [Annali di Chimica] (Italy) 1957, v. 47, no. 2.

DESCRIPTORS: *Caffeic acid, Plants, Chemical analysis.

Sergienko, S. R., Izmailov, N. A. and others.
POTENTIOMETRIC METHODS FOR STUDY OF HIGH MOLECULAR WEIGHT PETROLEUM COMPOUNDS. 1. POTENTIOMETRIC DETERMINATION OF ACIDITY (Potentsiometricheskie Metody Issledovaniya Vysokomelekulyarnykh Soedinenii Nefti. 1. Potentsiometricheskoe Opredelenie Kislotnosti). [1962] [14]p. 10 refs. [Warren Spring Lab. Trans.] NT 578; [DSIR] NLL M. 4980.
Order from OTS or SLA $1.60 62-25904

Trans. of #Zh[urnal] Anal[iticheskoi] Khim[ii] (USSR) [1955] v. 10, no. 5, p. 315-322.

DESCRIPTORS: *Petroleum, *Tar, Chemical analysis, Electrolytic titration, *Electrodes, Platinum electrodes, Glass electrodes.

Petroleum tars and other petroleum products which make the use of an indicator impossible because they are coloured were successfully titrated potentiometrically with an alcohol KOH solution in a mixture of alcohol and benzene as solvent. Of the several electrodes tested, smooth platinum and glass were best. (Chemical abstracts)

Singliar, M.
DETERMINATION OF MOISTURE CONTENT IN GASES, tr. by D. M. Rich. 1959 [7]p. 17 refs. IGRL-T/C-110; DSIR NLL M 1465.
Order from OTS or SLA $1.10 62-32396

Trans. of Chemicky Prumysl (Czechoslovakia) 1956, v. 6[31] p. 426-427.

DESCRIPTORS: *Gas analysis, Gases, Moisture, Determination, *Colorimetry, Reagents, Chemical indicators.

Spath, E. and Zajic, Emil.
1-NORNICOTINE. Article 3 on Tobacco Bases. [1962] 8p.
Order from K-H $10.00 K-H-3366-b

Trans. of [Chemische Berichte] (Germany) 1935, v. 68, p. 1667-1670.

DESCRIPTORS: *Tobacco, Nicotine, *Alkaloids.

Tarakanov, O. G. and Okunev, P. A.
CHROMATOGRAPHIC FRACTIONATION. PT. 1: A MODIFIED COLUMN FOR FRACTIONATING POLYMERS. [1962] 7p.
Order from ATS $12.50 ATS-34P66R

Trans. of #Vysokomolekul[yarnye] Soedin[eniya] (USSR) 1962, v. 4, no. 5, p. 683-689.

DESCRIPTORS: *Polymers, *Fractionation, *Chromatographic analysis, Distillation.

Terent'ev, A. P. and Obtemperanskaya, S. I.
A METHOD FOR THE QUANTITATIVE DETERMINATION OF ACRYLONITRILE BY MEANS OF SODIUM SULFITE. 6 July 62 [4]p. 7 refs.
Order from OTS or SLA $1.10 62-18976

Trans. of Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1956, v. 11 [no. 5] p. 638-639.

DESCRIPTORS: *Acrylonitriles, Determination, Quantitative analysis, *Sodium compounds, *Sulfites.

Inorganic Chemistry

Lapitskii, A. V., Simanov, Yu. P. and others.
SOME PROPERTIES OF TANTALUM PENTOXIDE, PT. I, tr. by J. M. Crabtree. Nov 61 [8]p. 8 refs. [DSIR] NLL M.6165.
Order from OTS or SLA $1.10 63-15652-1

Trans. of Moscow U. Vestnik. Ser[iya] Fiz[iko]-Mat[amaticheskikh] i Estestven[nykh] Nauk (USSR) 1954, v. 9, no. 3, p. 85-89.

DESCRIPTORS: *Tantalum compounds, Oxides, Hydrates, Dehydration, Acids, Chemical properties, *Crystal structure, X-ray diffraction analysis.

The dehydration of hydrated tantalum pentoxide has been studied in the temperature range 25° to 450°. A possible region of existence of the tantalic acid with composition $H_7[Ta(TaO_4)_4]$ has been determined using a continuous weighing balance. The polymorphic changes of tantalum pentoxide have been studied by thermographic and X-ray analysis. The parameters of two modifications of tantalum pentoxide have been determined and indexed in a rhombic lattice. The existence of a tantalic acid with composition $H_{13}[Ta(TaO_4)_6]$ is suggested. (Author)

Shchukarev, S. A. and Novikov, G. I.
REDUCTION OF CERIUM TRICHLORIDE BY HYDROGEN. [1962] 7p. 10 refs.
Order from OTS or SLA $1.10 AEC-tr-5477

Trans. of #Zhurnal Neorganicheskoi Khimii (USSR) 1956, v. 1, no. 3, p. 362-365.

DESCRIPTORS: *Cerium compounds, Chlorides, Reduction, Hydrogen, Chemical reactions, Chemical analysis.

When cerium trichloride is reduced by hydrogen at three different temperatures, a product is obtained, the composition of which, according to chemical analysis data, is $CeCl_{2.04 \pm 0.05}$. Thus, a compound of divalent cerium has been obtained for the first time.

Simanov, Yu. P., Lapitskii, A. V., and Artamonova, E. P.
SOME PROPERTIES OF TANTALUM PENTOXIDE, PT. II, tr. by J. M. Crabtree. Nov 61 [10]p. 7 refs. [DSIR] NLL M.6166.
Order from OTS or SLA $1.10 63-15652-2

Trans. of Moscow U. Vestnik. Ser[iya] Fiz[iko]-Mat[ematicheskikh] i Estestven[nykh] Nauk (USSR) 1954, v. 9, no. 9, p. 109-113.

DESCRIPTORS: *Tantalum compounds, Oxides, Preparation, Chemical properties, *Crystal structure, X-ray diffraction analysis.

Various modifications of tantalum pentoxide were studied. The occurrence of three new modifications of tantalum pentoxide was established. The parameters of the oasic lattices of the various modifications were determined, and the conditions for their interconversion were studied. (Author) (See also 63-15652-1)

Zinov'ev, A. A. and Chudinova, A. I.
THERMAL DECOMPOSITION OF THE PERCHLORATES OF MAGNESIUM, CALCIUM, BARIUM, AND ALUMINUM. [1962] [13]p. (figs. omitted) 5 refs.
Order from OTS or SLA $1.60 AEC-tr-4810

Trans. of #Zhur[nal] Neorg[anicheskoi] Khim[ii] (USSR) 1956, v. 1 [no. 8] p. 1722-1730.
Another trans. is available from LC or SLA mi$2.40, ph$3.30 as 60-13171, PA Trans-53, Sep 59 [15]p.

DESCRIPTORS: Thermochemistry, *Magnesium compounds, *Calcium compounds, Barium compounds, *Aluminum compounds, *Perchlorates, Pyrolysis.

For abstract see Technical Translations 3: 280, 1960

Organic Chemistry

Fokin, A. V., Volkova, E. V. and others.
A METHOD FOR THE PREPARATION OF POLY (TETRAFLUOROETHYLENE. [1962] 2p.
Order from ATS $4.00 ATS-18P66R

Trans. of Soviet patent 141, 301 [1961].

DESCRIPTORS: *Ethylenes, *Fluorides, *Polymers, Preparation.

Frankov, I. A.
COMPARATIVE DATA ON THE ANTICHOLINESTERASE ACTIVITY AND TOXICITY OF SOME ORGANOPHOSPHORUS COMPOUNDS. [1962] 11p.
Order from ATS $12.50 ATS-89P65R

Trans. of mono. Khim[iya] i Primenenie Fosfororgan-[icheskikh] Soedin[enii] (Akad. Nauk SSSR, Kazansk. Filial, tr. Konf. (no. 2) 1959) [Moscow] 1962, p. 43 p. 443-452.
A complete trans. of mono. is available from OTS or SLA $38.50 as 62-33349, JPRS-15432, 25 Sep 62 [1160]p.

DESCRIPTORS: Organic compounds, *Phosphorus compounds, *Cholinesterase, Toxicity.

Gilyarov, V. A.
TAUTOMERISM OF SOME IMIDES OF PHOSPHORUS ACIDS. [1962] 9p.
Order from ATS $10.75 ATS-78P63R

Trans. of mono. Khim[iya] i Primenenie Fosfororgan[ic heskikh] Soedin[enii] (Akad. Nauk SSSR, Kazansk. Filial, tr. Konf. (no. 2) 1959) [Moscow] 1962, p. 75-83 A complete trans. of mono. is available from OTS or SLA $38.50 as 62-33349. JPRS-15432, 25 Sep 62 [1160]p

DESCRIPTORS: *Phosphorus acids, Imides, Molecular isomerism.

Hopff, H. and Nenitzescu, C. D.
THE ACTION OF ACETYL CHLORIDE AND CARBON MONOXIDE UPON NORMAL AND ISOBUTANE: A CONTRIBUTION TO.THE MECHANISM OF THE FRIEDEL-CRAFTS SYNTHESIS. 28 Aug 36, 2p. 2 refs.
Available on loan from SLA 63-10495

Trans. of Angewandte Chemie (Germany) 1936, v. 49, no. 31, p. 553.

DESCRIPTORS: *Friedel-Crafts reactions, *Acetyl radicals, Chlorides, *Carbon compounds, Monoxides, *Butanes, Ketones, Catalysts, Aluminum compounds.

Iijima, K., Izume, Y. and others.
STUDIES OF REFORMING REACTIONS. PT. 2: HYDRODECYCLIZATION OF METHYLCYCOPENTANE AND BENZENE IN THE PRESENCE OF A REFORMING CATALYST. [1962] 14p.
Order from ATS $19.75 ATS-87P65J

Trans. of Sekiyu Gakkai Shi (Japan) 1962, v. 5, no. 4, p. 243-248.

DESCRIPTORS: Hydrocarbons, Chemical reactions, Decomposition, *Cyclopentanes, *Benzenes, *Catalysts.

Kipryanov, A. I., Fridman, S. G., and Pupko, L. S.
THE BLEACHING OF CYANINE DYES BY ALKALI AND ACID. [1961] [25]p. 12 refs. [DSIR] NLL M1966.
Order from OTS or SLA $2.60 61-13522

Trans. of [Akademiya Nauk URSR, Kiev]. Instytut Organichnoi Khimii. Zbirnyk, 1947, v. 13, p. 40-67.

DESCRIPTORS: *Photographic chemicals, *Dyes, Aniline derivatives, Carbonyl radicals, *Bleaching agents, Acids, Hydroxides, Phthalocyanines, Cyanines.

Kirmze, W.
THE FORMATION OF CARBENES BY MEANS OF α-ELIMINATION. 1961, 2p. 2 refs.
Available on loan from SLA 63-10578

Trans. of Angew[andte] Chem[ie] (West Germany) 1961, v. 73, no. 15, p. 540-541.

DESCRIPTORS: *Carbenes, Synthesis, Methanes, *Metalorganic compounds, Lithium compounds, Elimination reactions.

Köster, R. and Reinert, K.
SYNTHESIS OF NEW-TYPE HETEROCYCLIC BORON COMPOUNDS. [1962] 3p. 3 refs.
Available on loan from SLA 63-10562

Trans. of Angew[andte] Chem[ie] (West Germany) 1959, v. 71, p. 521.

DESCRIPTORS: Synthesis, *Boron compounds, Chemical analysis, *Molecular isomerism, Phenyl radicals, Proxyl radicals, Methyl radicals.

The supposition that heating of tri-(2 phenylpropyl) borane produces compounds in which the boron is bound to aromatic carbon atoms has been confirmed. Analytically and through conversion reactions, it was possible to confirm that the air-sensitive liquid was the representative of a new class of compounds, B-(2-phenylpropyl)-3-methyl-boroindan.
(Chemistry--Organic, TT, v. 9, no. 7)

Kryazhev, Yu. G. and Rogovin, Z. A.
A NEW METHOD FOR THE PREPARATION OF BLOCK COPOLYMERS. [1962] 2p.
Order from ATS $2.50 ATS-33P66R

Trans. of Vysokomolekul[yarnye] Soedin[eniya] (USSR) 1962, v. 4, no. 5, p. 783-784.

DESCRIPTORS: *Polymers, Synthesis, *Copolymerization.

Kudryavtsev, G. I., Matyash, T. A. and others.
HYDRAZIDATION OF POLYACRYLONITRILE FIBERS. 25 July 62 [17]p. 6 refs.
Order from OTS or SLA $1.60 62-18969

Trans. of Khim[icheskie] Volokna (USSR) 1961, no. 4, p. 13-19.

DESCRIPTORS: *Acrylonitrile polymers, *Fibers (Synthetic), *Hydrazines, Chemical reactions, Dyes, Synthetic fibers, Fibers.

The reaction of hydrazine hydrate with an acrylonitrile-methyl acrylate copolymer was studied under heterogeneous conditions, using a 50% alcoholic solution of hydrazine hydrate and pure hydrazine hydrate. It was found that the optimum conditions for forming hydrazide and other basic groups in the copolymer, which make it dyeable with acid dyes, are treatment with alcoholic hydrazine hydrate for 1 to 2 hours, at a ratio of 1:2 or 1:4 and a temperature of 70°. Treatment of a fiber made from a acrylonitrile-methyl acrylate (90.7:9.3) copolymer under the optimum conditions selected for the copolymer showed that the fiber loses practically none of its fundamental physico-mechanical properties for a reaction time of 1 to 2 hours. The fiber acquires dyeability for acid, direct, and acetate dyes. The best results are obtained when dyeing with acid dyes. (Author)

Pokrovskii, E. I. and Vol'kenshtein, M. V.
INVESTIGATION OF THE ISOTACTIC POLYPROPYLENE BY THE METHOD OF INFRARED SPECTROSCOPY [Issledovanie Izotakticheskogo Polipropilena Metodom Infrakrasnykh Spektrov]. [1962] 2p. 5 refs.
Order from OTS or SLA $1.10 62-18384

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1957, v. 115, no. 3, p. 552-553.
Other translations are available from SLA as R-4169 and from LC or SLA mi$1.80, ph$1.80 as 59-22234, CTS-447, Apr 58 [3]p.

DESCRIPTORS: *Propenes, *Infrared spectroscopy, Polymers.

For abstract see Technical translations 3: 218, 1960.

Rollet, A.-P., and Cohen-Adad, R.
ACTION OF HEAT ON MIXTURES OF UREA AND BIURET. [Feb 63] 2p.
Order from ATS $3.50 ATS-87Q66F

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1949, v. 229, p. 199-201. (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Urea, *Amides, Mixtures, Heat.

Rollet, A.-P., and Cohen-Adad, R.
THE SYSTEM WATER-BIURET. [Feb 63] 2p.
Order from ATS $4.00 ATS-86Q66F

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1951, v. 232, p. 2214-2216 (pub. by Gauthier Villars et Cie., Paris).

DESCRIPTORS: *Urea, *Amides, Water, Mixtures.

Serebryakova, E. K. and Frost, A. V.
EQUILIBRIUM OF HYDROCARBON REACTIONS. X. THE EXPERIMENTAL STUDY OF EQUILIBRIUM BETWEEN NORMAL BUTENE AND ISOBUTENE. [1962] 11p. (figs. omitted).
Available on loan from SLA 63-10407

Trans. of Zhurnal Obshchei Khimii (USSR) 1937, v. 7, [no. 1] p. 122-130.

DESCRIPTORS: *Hydrocarbons, Chemical reactions, *Chemical equilibrium, *Butenes, Molecular isomerism, *Isomeric transitions, Catalysts, Phosphoric acids.

The equilibrium constants between normal butenes and isobutenes are given in the temperature interval of 265° to 426°C. The experimental data from the equilibrium constants are embraced by equation: $\log K_p = \frac{304}{T} - 0.528 \pm 0.020$. It was shown that at 300°C at equilibrium the amount of isobutene and normal butenes is almost equal. With rise in temperature the equilibrium concentration of the isobutene decreases. The heat of isomerization of normal butenes into isobutene is equal to 1400 cal./mol. and is close to the observed thermochemical value. (Author)

Shiina, K. and Kumada, M.
A REACTION OF SILICON-CONTAINING AMINO COMPOUNDS. [1962] 12p.
Order from K-H $15.00 K-H 10512 b

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1960, v. 63 [no. 1] p. 173-175.

DESCRIPTORS: *Amines, *Silicon, *Chemical reactions.

Terent'ev, A. P., Buzlanova, M. M., and others.
QUANTITATIVE DETERMINATION OF ACRYLONITRILE WITH HEXAMETHYLENEIMINE. [1962] 2p.
Order from ATS $3.00 ATS-43P66R

Trans. of Moscow U. Vestn[ik]. Ser[iya] 2: Khim[iya] (USSR) 1962, v. 17, no. 5, p. 83-84.

DESCRIPTORS: *Acrylonitriles, Nitriles, Cyclohexanes, Imines, Quantitative analysis.

Wichterle, O. and Zelinger, J.
A METHOD OF PRODUCING LINEAR DENSITY GRADIENTS AND THEIR USE IN THE STUDY OF POLYMERIZATION. [1962] 7p.
Order from ATS $12.00 ATS-04P66C

Trans. of Chem[icky] Prumysl (Czechoslovakia) 1957, v. 7(32) no. 5, p. 265-268.

DESCRIPTORS: *Polymerization, Density.

Ziegler, K., Köster, R. and others.
NEW COMPLEX COMPOUNDS OF THE ALKYL ALUMINUMS. Pt. 30 of [Metallo-organic] Compounds. [Feb 63] 15p.
Order from ATS $24.50 ATS-01Q67G

Trans. of Justus Liebigs Ann[alen der] Chem[ie] (West Germany) 1960, v. 629 [no. 1/3] p. 33-49.
Other translations are available from SLA $2.60 as 61-20453 [1961] 29p. and $1.60 as 61-20862 [1961] 14p.

DESCRIPTORS: *Metalorganic compounds, *Complex compounds, *Aluminum compounds, *Alkyl radicals, Chemical reactions, Synthesis.

Physical Chemistry

Andreeva, O. I. and Kostikova, G. I.
STUDY OF CARBON-ISOTOPE EXCHANGE REACTIONS BETWEEN POTASSIUM CYANIDE AND CARBONATES AND THEIR USE FOR OBTAINING C^{14}-LABELED POTASSIUM CYANIDE (Izuchenie Reaktsii Izotopnogo Obmena Ugleroda Mezhdu Tsyanistym Kaliem i Karbonatami i Primenenie Ikh dlya Polucheniya Tsyanistogo Kaliya, Mechennogo Izotopom C^{14}). [1962] 15p. 6 refs.
Order from OTS or SLA $1.60 AEC-tr-5448

Trans. of mono. Conference on Radioisotopes in the Physical Sciences and Industry, Copenhagen, 6-17 Sep 60. Proceedings, v. 3, 1962, p. 111-122 (STI/PUB/20).

DESCRIPTORS: *Labeled substances, Production, *Potassium compounds, *Cyanides, Carbon, Radioactive isotopes, Lithium compounds, Sodium compounds.

Barium compounds, *Carbonates, Exchange reactions, *Radiochemistry.

The carbon-isotope exchange reaction between potassium cyanide and carbonates of lithium, sodium, potassium, and barium, was investigated. It was found that in the system KCN - $BaCO_3$ the exchange begins at 650° and is completed in 2 hr at 800°. In systems KCN - M_2CO_3 (where M denotes Li, Na, or K) the exchange begins at 500-550° and reaches 100% at 650° for Li_2CO_3, and at 700° for sodium and potassium carbonate. The rate constants for the isotopic exchange reaction were determined and the apparent activation energy calculated. The activation energy is ~45 kcal/mole for the system KCN - $BaCO_3$, ~32 kcal/mole for the systems KCN - Na_2CO_3 and KCN - K_2CO_3, and ~27 kcal/mole for the system KCN - Li_2CO_3. The conditions for the obtention of C^{14}-labeled potassium cyanide by the isotope exchange method followed by separation of the potassium cyanide from the carbonate by extraction with liquid ammonia were determined. (Author)

Bodenstein, Max.
AN ATTEMPT AT A THEORY OF THE CATALYTIC COMBUSTION OF AMMONIA. [1962] [14]p.
Order from SLA $1.60 62-20054

Trans. of Angewandte Chemie (Germany) 1927, v. 40, p. 174-177.

DESCRIPTORS: *Ammonia, *Combustion, Catalysis, Theory.

For the interpretation of the catalytic combustion of ammonia, the following reactions are assumed: $NH_3 + O_2 = HNO + H_2O$. The compound reacts mainly in two directions: $HNO + O_2 = HNO_3$; HNO_3 decomposes with the end result NO, H_2O, O_2; $HNO + NH_3 = N_2 + H_2O + H_2$ In addition, if neither enough oxygen nor enough ammonia is available to the compound, the following may also take place: $2HNO = H_2O + N_2O$ or $2HNO = H_2O + N_2 + O$, or, less probably, $2HNO = H_2 + 2NO$. The nature of the relation of the four reactions under certain assumptions idealizing the process is discussed; it is shown that the observations, particularly those of Andrussow with strongly varying ratios $O_2 : NH_3$, are in agreement with these ideas; and experiments are indicated through which this working hypothesis, which appears suitable for interpretation of the process, can be tested further.

Filippov, L. P.
USE OF THE THEORY OF SIMILARITY FOR DESCRIBING THE PROPERTIES OF LIQUIDS, tr. by Sergey Shewchuck. July 62, 56p. 32 refs.
Order from OTS or SLA $5.60 UCRL Trans-835(L)

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1957, v. 31, p. 582-588, 1136-1139, 1999-2003, 2435-2437; 1958, v. 32, p. 760-761, 986-989.

DESCRIPTORS: *Liquids, Physical properties, Theory, *Vapor pressure, Temperature, Viscosity, Density, Crystallization, *Thermodynamics, Fluid dynamics.

Contents:
General methods
Extrapolation of the temperature dependence of the pressure of saturated vapors and of orthobaric density
Precomputation of the critical quantities, pressure of saturated vapors and orthobaric density
Viscosity
Concerning the crystallization temperature
Concerning the temperature dependence of the pressure of saturated vapors.

Mairanovskii, S. G.
POLAROGRAPHIC BEHAVIOR OF QUARTERNARY PYRIDINE SALTS, tr. by G. N. Kasachkoff and G. F. Hill. 30 Jan 62 [9]p. 16 refs. [AMC](Redstone) Trans-nr 7-62.
Order from OTS or SLA $1.10 62-19000

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 110, no. 4, p. 593-596.

DESCRIPTORS: *Electrochemistry, *Polarographic analysis, *Pyridines, Pyridine derivatives, Lutidine, Salts, Chemical reactions, Electrolysis, Reduction, Catalysis, Mercury electrodes.

An investigation is made of the polarographic behavior of benzolsulfonate N-methylpyridine, iodides of N-ethylpyridine and N-isopropylpyridine, benzolsulfonates of N-methyl-β-picoline, N-methyl-α, α-lutidine, N-methyl-γ-ethylpyridine and iodized N-isopropyl-α, α-lutidine, and also for example the influence of the subsequent rapid chemical reaction of the products of electrolysis on the electrode process is studied. (Author)

Moritz, P.
ON THE RELATIONSHIP BETWEEN VISCOSITY AND THE SURFACE TENSION OF LIQUIDS. [1962] [9]p. (tables omitted) 16 refs.
Order from SLA $1.10 62-18757

Trans. of Periodica Polytechnica (Hungary) 1959, v. 3, p. 167-176.

DESCRIPTORS: *Liquids, *Surface tension, *Viscosity.

Pyatnitskii, L. N.
THE MECHANISM OF ACCELERATING THE FLAME DURING NORMAL COMBUSTION IN DETONATION. [1962] 4p. 10 refs.
Order from OTS or SLA $1.10 62-20429

Trans. of Akad[emiya] Nauk [SSSR]. Doklady, 1962, v. 144 [no. 6] p. 1262-1265.

DESCRIPTORS: *Flame propagation, Acceleration, Combustion, Detonation, Gases.

Rossikhin, V. S. and Tsikora, T. S.
STUDY OF SPECTRA PRODUCED BY HIGH-FREQUENCY ELECTRIC DISCHARGE IN GASES AND FLAMES AT ATMOSPHERIC PRESSURE (Spektroskopicheskoe Izuchenie Vysokochastotnykh Razryadov v Gazakh i Plameni pri Atmosfernom Davlenii) tr. by Alan Bekelman. [1962] 19p. 2 refs.
Order from OTS or SLA $1.60 AEC-tr-5288

Trans. of French trans. of Zhurnal Fizicheskoi Khimii (USSR) 1955, v. 29, no. 6, p. 1079-1086.

DESCRIPTORS: *Spectrographic data, *Gases, *Flames, Pressure, High frequency, *Electric discharges, Free radicals.

This article is concerned with the study of the spectrum produced by the high frequency discharge in air, carbon dioxide, acetylene, and in the flame of acetylene mixed with air at atmospheric pressure. The purpose of this work has been to study the elementary processes, produced in the course of these discharges, and in particular to study the mechanism of the formation of the free radicals such as C_2 and CH, which play a very important role in combustion. (Author)

Ruhle, F.
BREAKDOWN STRENGTH OF MIXTURES OF DIELECTRIC LIQUIDS. 18 Mar 49, 12p. (figs. tables omitted) 7 refs.
Order from SLA $1.60 62-18610

Trans. of Archiv f[ür] Elektrotechnik (Germany) 1941 [v. 35, no. 8] p. 490-501.

DESCRIPTORS: *Liquids, Dielectric properties, Mixtures, Electrochemistry, *Dielectrics.

Measurements of breakdown strength of mixtures of dielectric liquids are reported. Studies were conducted on some saturated hydrocarbons, aromatic hydrocarbons and their halogen derivatives as well as various mineral oils. The tests were performed with 50 cycle, a.c. (Author)

Sandulova, A. V., Bogoyavlenskii, P. S. and Dronyuk, M. I.
PRODUCTION OF SOLID SOLUTIONS OF THE SYSTEM Ge-Si FROM THE GASEOUS PHASE. [1962] [5]p. (figs. omitted) 6 refs.
Order from OTS or SLA $1.10 62-18820

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1962, v. 143, [no. 3] p. 610-612.

DESCRIPTORS: *Germanium, *Silicon, Selenium, Vapor pressure, Crystals, Phase transitions.

Savintsev, P. A.
VALENCE ELECTRONS OF ATOMS OF METALS AND THEIR PHYSICAL CHEMICAL PROPERTIES. [1960] 4p. 5 refs. MDF S-170.
Order from OTS $0.50 62-11290

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedenii]. Fizika (USSR) 1960, no. 1, p. 54-56.

DESCRIPTORS: *Metals, Atomic structure, *Electrons, Valence, Impurities, *Transition elements, Physical properties, Chemical properties, Electrochemistry, Atomic orbitals.

It is proposed to divide metals into three electrochemical classes: transition, non-transition with valence electrons s, non-transition with valence electrons sp. The influence of impurities of an electrochemical class is estimated by the change in the molecular concentration with which the maximum solubility, the diffusion coefficient, the melting point and the eutectic composition are accompanied.

Shpil'rayn, E. E. and Asinovskii, E. I.
FOR COMPUTING THE LATENT HEAT OF VAPORIZATION OF ALKALI METALS. 5 Sep 62 [11]p. 16 refs. FTD-TT-62-1085; AD-287 720.
Order from OTS or SLA $1.60 63-13172

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962, v. 5, no. 4, p. 35-40.

DESCRIPTORS: *Alkali metals, *Lithium, *Sodium, *Potassium, *Vaporization, Thermodynamics, Specific heat, Elasticity, Atomic weight, Equations of state, Theory, Data.

It is shown that the data on the elasticity of the vapor of alkali metals permit the computation of their molar heat, but not the specific heat of vaporization. The specific heats of vaporization are given for lithium, sodium and potassium, taking into account the effect indicated. (Author)

Starik, I. E., Sheidena, L. D., and Ilmenkova, L. I.
THE STATE OF PROTACTINIUM IN AQUEOUS SOLUTIONS. VI. ADSORPTION PROPERTIES OF PROTACTINIUM, tr. by J. G. Moore. [1962] 12p. 11 refs.
Order from OTS or SLA $1.60 AEC-tr-5253

Trans. of #Radiokhimiya (USSR) 1962, v. 4, no. 1, p. 44-49.

DESCRIPTORS: *Protactinium, Solutions, Nitric acid, Absorption, Metals, Platinium, Gold, Iron, Tin, Copper, Nickel, Glass, Halocarbon plastics.

During the study of the adsorption of protactinium on metals, platinium, gold, iron, tin, copper and nickel, it was shown that in weakly acidic and alkaline solutions (pH 1-12) the amount of adsorption is small with the exception of the region pH = 3-4. In the pH region 3-4, the adsorption of protactinium on various metals was:

$$Fe > Cu = Ni > Sn >> Au > Pt$$

The maximum adsorption of protactinium on teflon and on quartz glass is in the pH region 4.5-5. In 2 N HNO_3, the cationic complex of protactinium possesses the maximum charge. The hypothesis was given, that the significant adsorption of protactinium on glass from 10-14 N HNO_3, is determined, to all appearances, by the adsorption of the molecular form of the acido complex of protactinium. (Author)

Teshima, T., Hiyoshi, S. and others.
EXTRACTIVE DISTILLATION. I. THE VAPOR-LIQUID EQUILIBRIUM IN THE WATER, ACETIC ACID AND SULFURIC ACID SYSTEM. [1962] 6p.
Order from ATS $10.00 ATS-40P66J

Trans. of Kogyo Kagaku Zasshi (Japan) 1952, v. 55, no. 7, p. 492-494.
Another trans. is available from SLA $1.60 as 62-16184.

DESCRIPTORS: *Acetic acids, *Sulfuric acid, Water, Chemical equilibrium, Vapors, Liquids, *Fractionation, Carbonization.

For abstract see Technical Translations 8: 879, 1962.

Tikhomirov, V. I., Ipat'ev, V. V., and Gofman, I. A.
OXIDATION OF IRON IN WATER VAPOR, STEAM HYDROGEN MIXTURES AT HIGH TEMPERATURES. Jan 63.
Order from BISI ₹2 10s BISI-3075

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 95, no. 2, p. 305-308.
Another trans. is available from OTS $0.50 as 62-11208, MDF T-114 [1961] 6p.

DESCRIPTORS: *Oxidation, *Iron, Water vapor, Steam, Hydrogen, *High temperature research, Velocity, Pressure, Chemical reactions, Wustite.

Tomilov, A. P., Kaabak, L. V., and Varshavskii, S. L.
ELECTROCHEMICAL REDUCTION OF NITRILES. [1962] 8p.
Order from ATS $12.00 ATS-44P66R

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1962, no. 8, p. 562-566.

DESCRIPTORS: *Nitriles, Reduction (Chemistry), Electrochemistry, Chemical reactions.

Vlasov, V. G. and Bessonov, A. F.
OXIDATION OF URANIUM DIOXIDE. 31 Jan 63 [14]p. 32 refs. JPRS: 17403.
Order from OTS $0.50 63-21031

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Tsvetnaya Metallurgiya (USSR) 1962, v. 5, no. 5, p. 113-122.

DESCRIPTORS: *Uranium compounds, Dioxides, Oxidation, Reaction kinetics, Phase transitions, Catalysts, Alkali metal compounds, Carbonates, Thorium compounds, Zirconium compounds, Titanium compounds, Vacuum systems.

Study was made of the kinetics of oxidation of uranium dioxide by atmospheric oxygen in the range from 165° to 800° and at air pressures of 2.5 to 600 mm Hg. The values were calculated of the apparent activation energy of the process in different stages. The kinetic characteristics of oxidation of UO_2 by pure oxygen in the range from 125° to 330° with $p_{O_2} = 100$ mm Hg were investigated. Schemes of phase transformations upon oxidation of uranium dioxide for different temperature ranges were proposed. Study was made of the influence of admixtures of carbonates of alkali metals and the oxides ThO_2, ZrO_2, and TiO_2. An explanation of their effect was given. (Author)

Volhonskii, E.
THE EQUILIBRIUM OF TWO SUBSTANCES IN A MIXED BINARY SOLVENT. VIII. SYSTEM $BaSO_4$ - H_2SO_4 - H_2O. [1962] 22p. (figs. omitted) 6 refs.
Available on loan from SLA 63-10404

Trans. of [Zhurnal Obshchei Khimii] (USSR) 1909, v. 41, p. 1763-1778 and 1910, v. 42, p. 1180-1194.

DESCRIPTORS: *Chemical equilibrium, Solvents, *Barium compounds, Sulfates, *Sulfuric acid, Water, Reaction kinetics.

Zimin, A. V., Chumanteev, S.V., and Verin, A. D.
ACTION DES RAYONNEMENTS γ SUR LES MÉLANGES NH_3+C_6H_6 ET CCl_4+C_6H_6 [Effects of γ Radiation on the Mixtures NH_3+C_6H_6 and CCl_4+C_6H_6] tr. by B. Vinogradoff. 7 Apr 60 [21]p. 10 refs. CEA Trans. no. R913.
Order from OTS or SLA $2.60 61-23820

Trans. in French of mono. [Sbornik Rabot po Radiatsionnoi Khimii] (Recueil de Travaux sur la Chimie des Radiations) [Moscow, 1955] p. 249-260.
Another trans. is available in English from SLA as R-495, AEC-tr-2552.

DESCRIPTORS: *Radiation effects, Gamma rays, *Benzenes, *Solutions, *Ammonium radicals, Carbon compounds, Bromides, Carbon tetrachloride, Chemical reactions, Ammonia.

EARTH SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 69 (EARTH SCIENCES SERIES). 1 Feb 63 [15]p. JPRS: 17430.
Order from OTS $0.50 63-21041

Consists of abstracts of articles from the scientific and technical journals of Hungary.

DESCRIPTORS: *Abstracts, Literature, *Hungary, *Geophysics, Agriculture, Climatology, Meteorology.

Koblents-Mishke, O. I.
THE PRESENT STATUS OF KNOWLEDGE CONCERNING THE PRIMARY PRODUCTION OF THE OCEAN (Sovremennoe Sos Sostoyanie Izucheniya Pervichnoi Produktsii Okeana) tr. by M. Slessers. 1962 [30]p. 59 refs. HO Trans-147.
Order from OTS or SLA $2.60 62-24071

Trans. of Okeanologiya (USSR) 1961, v. 1, no. 1, p. 95-106.

DESCRIPTORS: *Marine biology, Algae, Fishes, Plankton, *Oceanography, *Photosynthesis, Light, Production

The paper contains a comprehensive summary of the development and present status of the Soviet and foreign investigations dealing with the primary production of the World Ocean. The various methods used in measuring the production, such as the oxygen, radio carbon, and chlorophyll methods are analysed, pointing out their advantages and limitations. In connection with it, the significance and nature of photosynthesis in the production process is analysed. The relationship between lighting conditions and quantity of production is determined, indicating the significance of mineral particles, phytoplankton and zooplankton in the vegetation process which varies by hours, seasons, geographical locations and depth and is also affected by the vertical and horizontal movement of waters, their intermixing and other factors. (Author)

Povzner, A. D.
INTERNATIONAL SCIENTIFIC COOPERATION: INTERNATIONAL SCIENTIFIC UNIONS AND THE PROBLEMS CONNECTED WITH ORGANIZING COOPERATION TO STUDY THE RESULTS OF RESEARCH UNDERTAKEN IN CONJUNCTION WITH THE IGY PROGRAM. [1961] 44p.
Order from OTS or SLA $4.60 61-15262

Trans. of Mezhdunarodnyi Geofizicheskii God. Informatsionnyi Byulleten' (USSR) 1960, no. 8, p. 67-84.

DESCRIPTORS: *Geophysics, *Scientific research, Scientific organizations, Research program administration.

Contents:
The system of international scientific unions
New forms of cooperation and coordination in the system of unions which developed in connection with the IGY
Decisions taken during 1958-59 on the questions of organizing, in the system of unions, the work connected with completing the IGY and determining the course future cooperation was to follow in geophysics and adjacent fields.

Sidorenkov, N. S.
EFFECT OF THE NONUNIFORM ROTATION OF THE EARTH ON ATMOSPHERIC AND HYDROSPHERIC PROCESSES. 13 Nov 62, 3p. AID rept. 62-175; [NASA-N63-10276]; AD-290 817.
Order from OTS or SLA $1.10 63-13414

Abstract trans. of Problemy Artiki i Antarktiki (USSR) 1961, no. 9, p. 45-59.
A complete trans. is available from OTS or SLA $6.60 in 62-32070, JPRS-14620, 27 July 62 [60]p.

DESCRIPTORS: *Geophysics, Earth, Rotation, Atmosphere, Pressure, Barometric pressure, Atmospheric motion, Ocean currents, Spheres, Lithosphere, Periodic variations.

Variations in the earth's rotation have been analyzed for their effects on the atmospheric and hydrospheric processes. Three types of variation in the angular velocity of the earth are considered: secular retardation, irregular fluctuations, and periodical seasonal variations. These variations in velocity alter the centrifugal forces produced by planetary rotation, and ultimately lead to a redistribution of mass. Equations are presented to determine the changes in atmospheric pressure and velocity that are brought about by the vertical and horizontal deforming forces of redistribution. These forces are shown to affect the velocity of water mass currents and also the ocean level.

Climatology and Meteorology

HIGH-ALTITUDE BALLOONS: ANNOTATED BIBLIOGRAPHY (PRELIMINARY). Rept. no. 1 of AID Work Assignment no. 35. 26 Nov 62 [37]p. 39 refs. AID rept. 62-190; AD-290 810.
Order from OTS or SLA $3.60 63-13417

DESCRIPTORS: *Bibliography, Abstracts, High-altitude, Balloons, *Meteorological balloons, Cosmic rays, Data, Collecting methods, *Meteorological satellites.

The entries in the annotated bibliography and the appendix are arranged alphabetically by author.

METEOROLOGICAL TERMS: RUSSIAN-ENGLISH LIST. 24 Nov 48 [59]p.
Order from OTS or SLA $5.60 63-15435

DESCRIPTORS: Vocabulary, *Meteorology.

METEOROLOGY AND HYDROLOGY, 1962, NO. 11: [SELECTED] ARTICLES. 1 Feb 63 [64]p. 176 refs. JPRS: 17424.
Order from OTS $1.75 63-21036

Trans. of Meteorologiya i Gidrologiya (USSR) 1962, no. 11, p. 20-27, 33-36, 39-42, 52-53, 57-70.

DESCRIPTORS: *Meteorology, *Hydrology, Literature, Wind, Cumulonimbus clouds, Clouds, Jet streams (Meteorology), Turbulence, Meteorological data, Meteorological satellites, Weather forecasting, Civil aviation, Glaciers, Oceanology, Symposia, Thermometers, Scientific research.

Contents:
Peculiarities of the wind field near cumulonimbus clouds, by S. M. Shmeter
Method of determining turbulence characteristics in jet streams, by N. Z. Ariel' and E. K. Byutner
Processing TV cloud pictures obtained with meteorological satellites, by F. Vel'tishchev
New forms of weather service for the civil air fleet, by A. V. Brodskii
Glaciological studies in the Caucasus, by G. N. Khmaladze
Aerology, pt. I: Methods of Aerological Measurements, by A. B. Kalinovskii and N. Z. Pinus (book review by I. M. Dolgin and S. I. Bokolov of mono. pub. Leningrad, 1961)
Literature on meteorology, hydrology and oceanography for 1961: articles in journals and collections
Conferences, meetings and seminars
New instruments
In the scientific research institutes of the hydrometeorological service
Hydrometeorology abroad.

Bashkirova, G. M., Khimach, M. A. and others.
INDUCING WINTER PRECIPITATION USING ITALIAN ANTI-HAIL ROCKETS. [1962] 5p.
Order from ATS $7.50 ATS-12P65R

Trans. of Gl[avnaya] Geofiz[icheskaya] Observ[atoriya, Leningrad]. Tr[udy] (USSR) 1962, no. 126[188] p. 3-7.

DESCRIPTORS: *Artificial precipitation, *Sounding rockets, Atmospheric sounding, Hail.

Budyko, M. I., ed.
HEAT BALANCE ATLAS. 9 July 59 [26]p. (maps. omitted). H-6795; JPRS: R-1079-D.
Order from OTS or SLA $2.60 63-13243

Trans. of mono. Atlas Teplovogo Balansa, Leningrad, 1955.

DESCRIPTORS: Heat, *Thermal radiation, *Maps, *Solar radiation, *Evaporation, Heat transfer, *Atmosphere, Oceans, *Ocean currents

Contents:
Total solar radiation
Radiation balance of the earth's surface
Expenditure of heat on evaporation
Turbulent heat exchange between the earth's surface and the atmosphere
Heat received or lost by ocean surface connected with the action of ocean currents
Evaporation

Chuvaev, A. P. and Osipova, G. I.
SOME RESULTS OF ANALYSIS OF NETWORK OBSERVATIONS ON CLOUDS AND PRECIPITATION IN THE REGION OF THE LAKE SEVAN INTERMONTANE BASIN. [1962] 19p.
Order from ATS $27.75 ATS-19P65R

Trans. of Gl[avnaya] Geofiz[icheskaya] Observ[atoriya, Leningrad]. Tr[udy] (USSR) 1962, no. 126[188] p. 40-56.

DESCRIPTORS: *Clouds, *Precipitation.

Gavrilenko, N. M.
VISIBILITY IN SNOWFALL AND PROBLEM OF FORECASTING IT. 19 May 60 [29]p. (tables figs. omitted) 16 refs. Trans-45; [DSIR] NLL M. 2715.
Order from OTS or SLA $2.60 61-23296

Trans. of Ukrain[skii] Nauc[hno]-Issled[ovatel'skii] Gidro-Met[rologicheskii] Inst[itut]. T[rudy] (USSR) 1958, v. 12, p. 31-56.

DESCRIPTORS: Meteorological data, *Snow, *Visibility, Weather forecasting, Mathematical prediction.

Gorelik, A. G. and Smirnova, G. A.
THE RELATIONSHIP BETWEEN THE FLUCTUATIONS OF RADIO ECHOES AND THE MICROSTRUCTURE OF PRECIPITATION. [1962] [4]p. 2 refs. [DSIR] NLL M. 6305.
Order from OTS or SLA $1.10 62-25943

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 139, no. 5, p. 1098-1100.

DESCRIPTORS: *Atmospheric precipitation, Microstructure, Particles, Scattering, *Meteorological radar, *Radar signals, Radio signals, Radiofrequency spectroscopy.

Komarov, V.
ON THE WAY TO CLIMATIC CONTROL. [1962] 3p. [DSIR] NLL M. 6301.
Order from OTS or SLA $1.10 62-25940

Trans. from Krasnaya Zvezda (USSR) 1961, 2 Dec, p. 6.

DESCRIPTORS: Climatology, *Climatic factors, Control systems, *Hydrology, Oceans, Solar energy, Particles.

A non-technical account of P. M. Borisov's plan to place a dam across the Bearing Straits; V. B. Cherenkov's plan to divert more solar energy to the Earth by means of a globe encircling ring of dust particles; and A. I. Shumilin's proposal to build a dyke in the Nevel Strait and pump warm water from the Pacific Ocean into the Arctic Ocean.

Koscevic, Petar, V.
THE YUGOSLAV HYDROMETEOROLOGICAL SERVICE AND INDUSTRY. 10 July 62 [29]p. JPRS: 14423.
Order from OTS or SLA $2.60 63-13105

Trans. of Tehnicki Pregled (Yugoslavia) [1962] v. 14, no. 2, p. 55-60.

DESCRIPTORS: *Hydrology, *Meteorology, Weather stations, Weather forecasting, Meteorological instruments, Hydroelectric power systems, Agriculture, Industry, *Yugoslavia.

Koshelenko, I. V.
INFLUENCE OF LOCAL CONDITIONS ON THE FORMATION OF FOGS (Vliyanie Mestnykh Uslovii na Obrazovanie Tumanov) tr. by Irene A. Donehoo.
July 61 [16]p. 9 refs.
Order from OTS or SLA $1.60 61-27774

Trans. of Ukrainskii Nauchno-Issledovatel'skii [Gidro-Metrologicheskii] Institut. Trudy (USSR) 1960, v. 21, p. 3-15.

DESCRIPTORS: *Fog, *Geophysics, Meteorological data, Temperature, Air mass analysis, Diurnal variations, Geography, Black Sea, *Marine meteorology

The characteristic synoptic situation, during which fogs most frequently occur, is the presence of a cyclone over the central or the eastern portion of the Black Sea and the areas of high pressure in the north. The influence of orography is expressed by the fact that over 65% of all cases of fog occur with two wind directions - the northeast (47%) and the southwest (19)%. At stations distant from the ridge, the maximum frequency (45)% of fogs occurs with the southeast and south wind directions, while in Simferopol' only 1.9% of fogs occur with these directions. Advection fogs in Simferopol' are observed with increased wind speeds. (Author)

Nikandrov, V. Ya.
DRY FLARES AS MEANS OF INTRODUCING CRYSTALLIZATION NUCLEI INTO FOG FROM THE EARTH'S SURFACE. [1962] 3p.
Order from ATS $4.00 ATS-16P65R

Trans. of Gl[avnaya] Geofiz[icheskaya] Observ[atoriya, Leningrad]. Tr[udy] (USSR) 1962, no. 126[188] p. 22-24.

DESCRIPTORS: Earth, Surface area, *Fog, Nuclei, Crystallization, Flares.

Senderikhina, I. L.
ON THE RELATIONSHIPS AMONG THE COEFFICIENTS OF TURBULENT MOMENT, HEAT, AND MATTER TRANSFER IN THE SURFACE LAYER OF THE ATMOSPHERE. 25 Jan 63 [25]p. 40 refs.
JPRS: 17299.
Order from OTS or SLA $2.60 63-15371

Trans. from Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy (USSR) 1961, no. 121(183).

DESCRIPTORS: *Meteorology, Atmospheric motion, Turbulence, Heat transfer, Mass transfer, Hydrodynamics, Meteorological phenomena.

The present article describes the results of processed data on meteorological elements in the surface layer of the atmosphere and the analysis of hydrodynamic studies of turbulent transfer. It is shown that the ratio of the turbulent moment transfer coefficient to the analogous heat or matter transfer coefficients is always less than one. (Author)

Geodesy

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 71 (EARTH SCIENCES SERIES). 6 Feb 63 [16]p. JPRS: 17507.
Order from OTS $0.50 63-21064

Consists of abstracts of articles from the scientific and technical journals of Hungary and Yugoslavia.

DESCRIPTORS: *Abstracts, Literature, *Hungary, *Yugoslavia, *Geodesics, Mapping, Aerial photography, Surveying.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 78 (EARTH SCIENCES SERIES). 12 Feb 63 [8]p. JPRS: 17585.
Order from OTS $0.50 63-21106

Abstract trans. of Geodeticky a Kartograficky Obzor (Czechoslovakia) 1962, v. 8, no. 12, p. 221-241.

DESCRIPTORS: *Abstracts, Literature, Czechoslovakia *Geodesics, Data, Processing, Instrumentation, Mapping, Terrain, Aerial photography, Economics.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 80 (EARTH SCIENCES SERIES). 13 Feb 63 [6]p. JPRS: 17626.
Order from OTS $0.50 63-21129

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia.

DESCRIPTORS: *Abstracts, Literature, *Czechoslovakia, *Geodesics, Numerical analysis, Gyroscopes, Personnel, Symposia.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 86 (EARTH SCIENCES SERIES). 19 Feb 63 [8]p. JPRS: 17714.
Order from OTS $0.50 63-21164

Abstract trans. of Revista de Geodezie si Organizarea Territoriului (Rumania) 1962, v. 6, no. 4, p. 3-74.

DESCRIPTORS: *Abstracts, Literature, Rumania, *Geodesics, Instrumentation, Digital computers, Terrain.

THE CAUCASIAN BRANCH OF THE IMPERIAL RUSSIAN GEOGRAPHICAL SOCIETY, BULLETIN, 1884-85, VOL. 8: [SELECTED ARTICLES]. [1962] [48]p. 12 refs. ACIC RR-44.
Order from OTS or SLA $4.60 62-15981

Trans. of [Gosudarstvennoe] Russkoe Geograficheskoe Obshchestvo. Kavkazskii Otdel. Izvestiya, 1884-85; v. 8, p. 225-243, 285-296 [332]-335, 344-346.

DESCRIPTORS: *Geodesics, Earth, Configuration, Mountains, Lithosphere, Terrain, Geodetic astronomy, Trigonometry, Telegraph communication systems, Hydrographic surveying.

Contents:
The problem of the shape of the earth, by I. I. Stebnitskii
Telegraphic determination of the longitudes of Tiflis, Shemakha, and Baku and new determination of the latitudes of these points, by P. Kul'berg
Observations of the reversible pendulum in Shemakha and Baku, by P. Kul'berg
Triangulation points in the Transcaspian Region determined by A. I. Pervas in 1881 and 1882
Telegraphic determination of the differences in longitudes Batum-Nikolaev, by P. Kul'berg.

MOMENTS OF RHYTHMIC SIGNALS DETERMINED BY THE TIME-KEEPING SERVICE OF THE STATE SCIENTIFIC RESEARCH INSTITUTE OF GEODESY AND CARTOGRAPHY, FOR RADIO STATIONS RAI (MOSCOW), GBR (RUGBY) AND FLY (BORDEAUX). Trans. on Soviet Geodesy 1925-40. 12 Jan 61 [4]p. JPRS: R-109 -N/59.
Order from OTS or SLA $1.10 61-11751

Trans. of Geodezist (USSR) [1931, v. 7] no. 10, p. 70.

DESCRIPTORS: *Time signals, *Tables, Time.

TRANSACTIONS OF THE MOSCOW INSTITUTE OF GEODETIC, AERIAL SURVEY, AND CARTOGRAPHIC ENGINEERS, 1957, VOL. 27: SELECTED TRANSLATIONS. [1961] [47]p. ACIC LD-23, 24, 25.
Order from OTS or SLA $4.60 62-15983

Trans. of Moskovskii Institut Inzhenerov Geodezii, Aerofotos"emki i Kartografii. Trudy (USSR) 1957, v. 27, p. 45-51, 65-78, 91-93.

DESCRIPTORS: *Geodesics, Instrumentation, Wire, Tensile properties, Hoists, *Geodetic astronomy.

Contents:
Multiple pulley for putting tension on measuring wires used in the measurement of the length of the sides of a polygonometric traverse, by L. A. Bashlavin
The determination of the geographical latitude of the dome of the Miigaik Astonomical observatory by the methods of Pevtsov and Talcott, by M. N. Severov
Zenith and azimuth methods for time and latitude determination, by A. N. Kuznetsov.

Bogdanov, A. A., Gurevich, B. L., and Shereshevskaya, S. Ya.
GRAVITY ANOMALIES AND THEIR CONNECTION WITH THE MOST IMPORTANT TECTONIC PATTERNS OF THE WESTERN REGIONS OF THE UKRAINIAN SSR [Anomalii Svly Tyazhestm i Ikh Sryaz's Glavnishimi Tektonicheskimi Elementami Zapadnykh Oblastei Ukrainskoii SSR]. [1961] [20]p. 9 refs. ACIC LD-45-u
Order from OTS or SLA $1.60 62-15991

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya i Geofizicheskaya, 1950, v. 14, no. 3, p. 223-231.
A trans. in German is available from OTS or SLA $1.60 as 61-13453, DSIR LLU M. 2096; Trans-T/L-952 [1961] [11]p.

DESCRIPTORS: *Gravity, *Geophysical surveying, *Geology, Gravity anomalies.

Bukhteev, A.
TRIANGULATION OF THE BLACK AND AZOV SEAS, 1871-1901. [1961] [163]p. ACIC RR-41.
Order from OTS or SLA $12.00 62-15987

Trans. of mono. Triangulyatsiya Chernago i Azovskago Morei 1871-1901) Leningrad, 1907.

DESCRIPTORS: *Hydrographic surveying, *Geodesics, Geodetic astronomy, Azimuth, Terrain, Trigonometry, *Black Sea.

Dubyago, A. D.
REMARKS ON THE ESTIMATION OF THE ACCURACY OF OBSERVATIONS WITH VARIOMETERS. [1961] [16]p. 2 refs. ACIC LD-45-F.
Order from OTS or SLA $1.60 62-15970

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya i Geofizicheskaya, 1944, v. 8, no. 1, p. 18-24.

DESCRIPTORS: *Gravity, Gravity anomalies, Surveying, Errors, Potential theory, Geodesics.

This article gives new formulae for estimating the accuracy of observations with gravitational variometers, obtained from the examination of closure errors of separate routes of a gravitational survey. (Author)

Fedynskii, V. V.
BAROMETRIC EFFECTS ON GRAVIMETERS. [1961] [9]p. 4 refs. ACIC LD-45-k.
Order from OTS or SLA $1.10 62-15985

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya i Geofizicheskaya, 1945, v. 9, no. 2, p. 108-111.

DESCRIPTORS: *Densimeters, *Barometric pressure, Pressure, Gravity.

Fersman, A. E., ed.
PAMIR EXPEDITION 1928. TRANSACTIONS, SECTION 3: GEOGRAPHY AND GEODESY. [1962] [128]p. 51 refs. ACIC G-6.
Order from OTS or SLA $10.10 62-15989

Trans. of mono. Pamirskaya Ekspeditsiya 1928 G., Leningrad, 1930, 94p.

DESCRIPTORS: Geography, *Geodesics, *Hydrographic surveying, *Glaciers.

Contents:
The Alai Valley (orohydrography and glaciation) by N. L. Korzhenevskii
Triangulation in the Alai Valley, by K. V. Isakov.

Gamburtsev, G. A.
DETERMINATION OF THE GRAVITY CENTER OF A DISTURBING MASS FROM GRAVITATIONAL OBSERVATIONS. [1961] [16]p. ACIC LD-45-A.
Order from OTS or SLA $1.60 62-15976

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya i Geofizicheskaya, 1938, v. 2, no. 4, p. 307-315.

DESCRIPTORS: *Gravity, Gravity anomalies, Potential theory, Green's function, Geodesics.

The computation problem of the coordinates of the gravity center of disturbing masses is solved on the basis of the values of potential and its derivatives, given on an infinite plane. Quoted formulae can be applied to the interpretation of results of gravimetric prospecting in domains of local gravitational anomalies. (Author)

Gamburtsev, G. A. and Malovichko, A. K.
TWO RATIOS OF WORK OF HORIZONTAL PENDULUMS [AND] ON THE SOLUTION OF THE INVERSE GRAVIMETRIC PROBLEM. [1961] [24]p. 2 refs. ACIC LD-48-G.
Order from OTS or SLA $2.60 62-15995

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1953, no. 3, p. 201-208 and 228-231.

DESCRIPTORS: *Gravity, Suspension devices, Elasticity, Torque, Sensitivity, Oscillation, Geodesics, Geophysics.

The paper shows that for a gravitationally-astatized torsional horizontal pendulum there exist two ratios of work which considerably differ from each other as to the magnitude of their attainable maximum period and, consequently, as to their sensitivity to inclinations. To obtain a more suitable ratio of work, it is necessary that the position of the system's equilibrium, under the simultaneous joint action of the gravitational and elasticity forces, should be the same as under the action of elasticity forces alone, i. e., it is necessary that the suspension fiber should be untwisted. The system's twist of only a small fraction of a degree causes a sharp decrease of sensitivity. (Gamburtsev) The method of successive approximations for solution of the inverse gravimetric problem is explained. The explanation consisting mainly in the reduction of the gravity anomaly to the linearized case and clarified further by examples explaining the computation technique. This method contributes to the expediency of direct methods of anomaly interpretation. (Malovichko)

Gel'fand, I. S.
THE DIRECT AND INVERSE PROBLEM OF THE GRAVITATIONAL POTENTIAL FOR A HOMOGENEOUS SEGMENT OF A SPHERE. [1961] [13]p. 3 refs. ACIC LD-45-D.
Order from OTS or SLA $1.60 62-15975

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya i Geofizicheskaya, 1941, v. 5, no. 1, p. 89-94.

DESCRIPTORS: *Gravity, Potential theory, Spheres, Geodesics.

The work is dedicated to the computation of the potential for a spherical segment. A method is given for the proc essing of gravitational observations by values of gravity gradient, by difference in curvature, on the basis of the solution of a direct problem. (Author)

Ivanov, V. K.
DETERMINATION OF HARMONIC MOMENTS OF DISTURBING MASSES BY THE DERIVATIVE OF THE GRAVITATION POTENTIAL GIVEN ON A PLANE. [1961] [23]p. 3 refs. ACIC LD-45-V.
Order from OTS or SLA $2.60 62-15993

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya i Geofizicheskaya, 1950, v. 14, no. 5, p. 403-414.

DESCRIPTORS: *Gravity, Gravity anomalies, *Potential theory, Inertia, Moments, Functions, Integrals, Differential equations, Geodesics.

Formulae are derived, enabling one to find the harmonic moment of the mass from the values of one of the derivatives of its plane potential. Results are expressed by single integrals taken in the final interval, which makes it possible to use formulae of mechanical squares for their computation. A method is given for evaluation of the order of error resulting from substitution of integration of the entire plane by integration of its final section. Formulae are also derived for derivatives from the basic harmonic functions expressed in spherical coordinates derived from Cartesian coordinates. (Author)

Iveronov, I.
REPSOLD'S REVERSIBLE PENDULUM OSCILLATION OBSERVATIONS CARRIED OUT AT PULKOVO, MOSCOW AND IN MOSCOW GUBERNIYA. [1962] [110]p. 5 refs. ACIC RR-42-d.
Order from OTS or SLA $9.10 62-15961

Trans. of [Gosudarstvennoe] Russkoe Geograficheskoe Obshchestvo. Zapiski po Obshchei Geografii, 1896, v. 30, no. 1, p. I-VII and 1-97.

DESCRIPTORS: *Geodesics, Oscillation, Gravity, Harmonic analysis, Clocks, Geophysics, Instrumentation, Gravity anomalies.

Kazinskii, V. A.
ON THE ADDITION OF OSCILLATIONS OF TWO GRAVIMETRIC PENDULUMS ON A SHIP. [1961] [9]p. 3 refs. ACIC LD-45-J.
Order from OTS or SLA $1.10 62-15986

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya i Geofizicheskaya, 1944, v. 8, no. 6, p. 381-384.

DESCRIPTORS: *Gravity, Measurement, Marine geophysics, Ships, Suspension devices, Oscillation, Geodesics.

In this article, we will explain in detail, the derivation of the equation for the oscillation of two gravimetric pendulums on a rolling ship. We make the assumption that the ship, in the plane of oscillation of pendulums, has only a vertical and a horizontal motion. Essentially, for the obtained equation the presence of the multiplier $\cos \psi^r_0$ is shown in it, which accounts for the influence of the differences of the amplitude from the pendulum's release to its cessation. (Author)

Kneissl, Max.
THE INTERNATIONAL EUROPEAN GRAVIMETER-CALIBRATION BASES (Die Internationalen Europäischen Eichbasen). [1962] [100]p. 40 refs. ACIC G-23.
Order from OTS or SLA $8.60 62-25593

Trans. of [Akademie der Wissenschaften, Munich. Mathematisch-Naturwissenschaftliche Klasse. Abhandlungen] (West Germany) 1956, new series no. 79[B, 100p.]

DESCRIPTORS: Densimeters, *Calibration, *Gravity, Measurement, Instrumentation, Geodesics, Europe.

Krasovskii, F. N.
CONTEMPORY PROBLEMS AND THE DEVELOPMENT OF ARC MEASUREMENTS. [1961] [56]p. ACIC LD-45-E
Order from OTS or SLA $5.60 62-15967

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya i Geofizicheskaya, 1941, v. 5, no. 3, p. 229-254.

DESCRIPTORS: *Geodesics, *Geodetic astronomy, *Earth, Configuration, Lithosphere, Ellipsoids, Bodies of revolution.

Magnitskii, V. A.
PROBLEM OF THE SEPARATION OF LOCAL GRAVITATIONAL ANOMALIES. [1961] [13]p. 6 refs. ACIC LD-45-T.
Order from OTS or SLA $1.60 62-15992

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya i Geofizicheskaya, 1949, v. 13, no. 6, p. 556-562.

DESCRIPTORS: *Gravity anomalies, Separation, Harmonic analysis, Geology, Geodesics.

The problem of the separation of gravitational fields by projection of anomalies onto a remote, external, level surface is discussed in this article. (Author)

Maksimov, F. O.
REVIEW OF TRIGONOMETRIC WORK IN RUSSIA. [1962] [55]p. 2 refs. ACIC RR-45.
Order from OTS or SLA $5.60 62-15980

Trans. of [Gosudarstvennoe] Russkoe Geograficheskoe Obshchestvo. Zapiski, 1851, v. 5, p. 154-197.

DESCRIPTORS: *Geodesics, Geodetic astronomy, Trigonometry, Terrian, Hydrographic surveying.

Mikheichev, V. S.
FIELD TESTS OF THE SVV-1 LIGHT RANGE-FINDER. 1 Feb 63 [5]p. 2 refs. JPRS: 17417.
Order from OTS $0.50 63-21035

Trans. of Moskovskii Institut Inzhenerov Geodezii, Aerofotos"emki i Kartografii. Trudy (USSR) 1959, v. 34 p. 129-130.

DESCRIPTORS: *Optical equipment, *Range finding, Tests, Geodesics, Instrumentation.

Mikov, D. S.
DETERMINATION OF VALUE AND DIRECTION OF THE MAGNETIC INTENSITY OF DISTURBING BODIES ON THE RESULTS OF MAGNETIC AND GRAVITATIONAL SURVEYS. [1961] [6]p. ACIC LD-48-F.
Order from OTS or SLA $1.10 62-15996

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1952, no. 5, p. 55-56.

DESCRIPTORS: *Terrestrial magnetism, Magnetism, Geophysics, *Gravity, Gravity anomalies, Ores, Magnetic properties, Geodesics.

Orlov, A. Ya.
ON THE DEFORMATION OF THE EARTH ACCORDING TO OBSERVATIONS WITH HORIZONTAL PENDULUMS IN TOMSK AND POLTAVA. [1961] [45]p. ACIC LD-45-B.
Order from OTS or SLA $4.60 62-15971

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya i Geofizicheskaya, 1939, v. 3, no. 1, p. 3-29.

DESCRIPTORS: *Geodesics, *Earth, Configuration, Deformation, Harmonic analysis, Gravity, Tides, Diurnal variations, Geophysics, Oscillation, Gravity anomalies, Lithosphere.

Pryakhin, A. P.
ACCURACY OF GEODETIC TOPOGRAPHIC WORK IN THE METHODS OF FIELD ESTABLISHMENT AND FREQUENCY SOUNDING. 17 Jan 63 [16]p. 8 refs. JPRS: 17175.
Order from OTS or SLA $1.60 63-15110

Trans. of Razvedochnaya i Promys[lovaya] Geofizika (USSR) 1962, v. 43, p. 72-79.

DESCRIPTORS: *Geodesics, Terrain, *Mapping, Surveying, Electromagnetic fields, Determination, Errors, Statistical analysis.

Shcheglov, S. N.
DETERMINATION OF ELEVATIONS BY MEANS OF GEODETIC LEVELLING ALONG THE ROUTE MIRNY-KOMSOMOLSKAYA. [1962] 5p. (2 figs. omitted) 3 refs.
Order from OTS or SLA $1.10 62-24045

Trans. of Arkticheskii i Antarkticheskii Nauchno-Issledovatel'skii Institut. Informatsii Byulleten' (USSR) 1961, no. 28, p. 37-41.

DESCRIPTORS: *Geodesics, Surveying, Aerial photography, Mapping, Leveling rods, Range finding, *Antarctic regions.

Shcherbakov, D. I., ed.
PAMIR EXPEDITION 1931, TRANSACTIONS, NO. I(16): REPORTS. [1962] [224]p. 56 refs. ACIC G-7.
Order from OTS or SLA $15.00 62-15968

Trans. of mono. Pamirskaya Ekspeditsiya 1931 G., Leningrad, 1933, 149p.

DESCRIPTORS: *Geology, Geophysical prospecting, Mountains, Geodesics, *Geodetic astronomy, Geological survey, Antimony, Mercury, Ores, Deposits, Asia.

Contents:
The expedition of 1931 into the high mountains of the Pamirs, by D. I. Shcherbakov
The geodetic-astronomy projects of the Pamir Expedition of 1931, by I. D. Zhongolovich
Geological surveys of the Pamir Expedition of 1931. by T. Borovskaya
Data on the geology of the Kzyl-rabat region in the Pamirs, by A. M. Prokopenko
The Chauvai antimony-mercury ore deposit, by A. V. Moskvin.

Shneerson, B. L.
ON A METHOD OF DISTINGUISHING LOCAL AND REGIONAL GRAVIMETRIC FIELDS. [1961] [11]p. 2 refs. ACIC LD-45-Q.
Order from OTS or SLA $1.60 62-15990

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya i Geofizicheskaya, 1946, v. 10, no. 5, p. 449-454.

DESCRIPTORS: *Gravity, Gravity anomalies, Potential theory, Geodesics.

Utilizing conformable, known equations from the theory of the potential semi-diurnal mean, gravity and its gradients on different levels above the surface can be computed. Comparing gravitational profiles and charts, compiled from observed data as well as from newly computed data for different levels above the Earth's surface, it is possible to determine more accurately the position of a local anomaly by the degree of the decrease of the values in the anomaly, and also to determine, whether it is governed by shallow or deeply buried disturbing masses. This method was utilized in the investigation of some gravitational anomalies on the Samarskaya Luka. (Author)

Sokolov, A.
REPSOLD'S REVERSIBLE PENDULUM OSCILLATION OBSERVATIONS CARRIED OUT AT PULKOVO AND PARIS IN 1893-94. [1962] [82]p. 9 refs. ACIC RR-42-e.
Order from OTS or SLA $8.10 62-15973

Trans. of [Gosudarstvennoe] Russkoe Geograficheskoe Obshchestvo. Zapiski po Obshchei Geografii, 1896, v. 30, no. 2, p. 1-78.

DESCRIPTORS: *Geodesics, Oscillation, Gravity, Harmonic analysis, Clocks, Geophysics, Instrumentation, Gravity anomalies.

Tikhonov, A. N. and Bulanzhe, Yu. D.
ON THE AVERAGING OF GRAVIMETRIC FIELDS. [1961] [43]p. 9 refs. ACIC LD-45-L.
Order from OTS or SLA $4.60 62-15984

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya i Geofizicheskaya, 1945, v. 9, no. 3, p. 240-260.

DESCRIPTORS: *Gravity, Potential theory, Gravity anomalies, Maps, *Geophysics, Geodesics, Surveying.

In this article we consider the meaning of regional and local gravimetric fields obtained by the averaging of gravimetric maps by means of various charts. The geological meaning of gravimetric fields is explained for certain cases. (Author)

Velikanov, M. A.
PRINCIPLE OF THE GRAVITATION THEORY OF THE MOVEMENT OF SEDIMENTS. [1961] [26]p. 13 refs. ACIC LD-48-i.
Order from OTS or SLA $2.60 62-15994

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1954, no. 4, p. 349-359.

DESCRIPTORS: *Sedimentation, Marine geology, Water waves, Transport properties, *Gravity, Marine geophysics.

The initial physical concepts of the gravitation theory behind the movement of sediments are set forth. The problems of the determination of the transporting capabilities of the current and distribution of the concentration of sediments by depth are examined. Principal attention is devoted to the case of small concentration of sediments. Satisfactory agreement of computation results obtained on the basis of the gravitation theory, with experimental results is indicated. (Author)

Vil'kitskii, A.
RESPOLD'S REVERSIBLE PENDULUM OSCILLATION OBSERVATIONS CARRIED OUT IN KISHINEV AND ALEKSANDROVSK IN 1892. [1962] [53]p. 8 refs. ACIC RR-42-f.
Order from OTS or SLA $5.60 62-15977

Trans. of [Gosudarstvennoe] Russkoe Geograficheskoe Obshchestvo. Zapiski po Obshchei Geografii, 1903, v. 30, no. 3, p. 1-50.

DESCRIPTORS: *Geodesics, Oscillation, Gravity, Harmonic analysis, Clocks, Geophysics, Instrumentation, Gravity anomalies.

Vil'kitskii, A.
REPSOLD'S REVERSIBLE PENDULUM OSCILLATION OBSERVATIONS CARRIED OUT IN YENISEISK, GOL'CHIKHA, DIKSON ISLAND, TOBOL'SK, BEREZOV, OBDORSK AND YUGORSKII SHAR IN 1894-96. [1962] [87]p. ACIC RR-42-g.
Order from OTS or SLA $8.10 62-15972

Trans. of [Gosudarstvennoe] Russkoe Geograficheskoe Obshchestvo. Zapiski po Obshchei Geografii, 1903, v. 30, no. 4, p. 1-84.

DESCRIPTORS: *Geodesics, Oscillation, Gravity, Harmonic analysis, Hydrographic surveying, Clocks, Geophysics, Instrumentation, Gravity anomalies.

Zamorev, A. A.
DETERMINATION OF DERIVATIVES OF THE GRAVITATIONAL POTENTIAL AND THE RELATIONS BETWEEN THE MOMENTS OF DISTURBING MASSES BY A DERIVATIVE GIVEN ON A PLANE. [1961] [20]p. 5 refs. ACIC LD-45-C.
Order from OTS or SLA $1.60 62-15974

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geograficheskaya i Geofizicheskaya, 1939, v. 3, no. 3, p. 275-286.

DESCRIPTORS: *Gravity, Gravity anomalies, Potential theory, Inertia, Moments, Green's function, Differential equations, Geodesics.

Formulae permitting the computation of other derivatives of a gravity potential, which is given on a plane, from its values and the relations between the moments of disturbing masses are given in this article. The case of a logarithmic potential is examined separately. (Author)

Geography

Kirillov, A. M.
POLISH SCHOOL ATLASES ON GEOGRAPHY. [1961] [17]p. ACIC LD-21a.
Order from OTS or SLA $1.60 62-15561

Trans. of Moskovskii Institut Inzhenerov Geodezii, Aerofotos"emki i Kartografii. Trudy (USSR) 1957, v. 28, p. 71-76.

DESCRIPTORS: Poland, Education, Mapping, *Maps, Map projections, Scales, *Geography.

Lyubimova, Elena L'vovna.
GEOGRAPHY OF KAMCHATKA. 8 Feb 63 [195]p. 211 refs. JPRS: 17536.
Order from OTS $3.00 63-21084

Trans. of mono. Kamchatka, Fiziko-Geograficheskii Ocherk (Kamchatka, a Physico-Geographic Sketch) Moscow, 1961, 190p.

DESCRIPTORS: *Geography, Geology, Geophysics.

The purpose of this book is to give a complete description of the physical geography of the Kamchatka Peninsula. The book deals with all the different landscapes of Kamchatka -- from lifeless volcanic uplands with perpetual snows and glaciers down to the luxuriant meadows with high grasses and unusual forests of "black" stone birth. (Preface)

Geology

EROSION IN THE GULLY DRAINAGE SYSTEMS IN THE MIDDLE YELLOW RIVER LOESS REGION AND ITS RELATION TO WATER AND SOIL CONSERVATION. 13 Feb 63 [203]p. JPRS: 17610.
Order from OTS $3.50 63-21119

Trans. of mono. Huang Ho Chung Yu Huang T'u Ch'u Yu Kou Tao Liu Yu Ch'in Shih Ti Mao Chi Ch'i Tui Shui T'u Pao Ch'ih Kuan Hsi Lun Ts'ung, Peiping, 1958, 69p.

DESCRIPTORS: *Terrain, *Soils, *Errosion, Hydrology, Water, Rivers, *China.

Contents:
Topography of the small river valleys south of Hsi Feng Chen in Lung Tung (Eastern Kansu) by Lo Lai-hsing
Topography of the Wang Chia Kou in Li Shan, Chin Hsi (Western Shansi) by Lo Lei-hsing
Topography of the Ts'ai Chia Ya Hsi Kou in Hsing Hsien, Chin Hsi, by Ch'i Yen-nien
Topography of Tao Huang Kou Valley in Ho Ch'u Hsien, Chin Hsi, by Chu Chen-ta
Topography of the middle section of the Ch'ing Yun Kou Valley in Yu Lin, Shan Pei (Northern Shensi) by Ch'i Yen-nien
Topography of the Chang-chu Kou Valley in Ching Pien Hsien Shan Pei, by Su Shih-yu
Topography of the An Chia Kou Valley in Ting Hsi Hsien, Kansu Province, by Wang Chih-ch'ao and Wang Pin-sheng
Topography of the Shao Ch'a Kou Valley in Hui Ning Hsuen, Kansu Province, by Lo Lsi-hsing.

GEOLOGICAL BULLETIN (MONTENEGRO) 1958, VOL. 2, tr. by Zorica Stojadinovic. 1962, 332p. PL-480 Int.
Order from OTS $3.25 60-21673

Trans. of Geoloski Glasnik. [Bulletin Geologique] (Yugoslavia) 1958, v. 2, 391p.

DESCRIPTORS: *Geology, Literature, Yugoslavia, *Marine geology, Paleoecology, Sedimentation, Gastropoda, Algae, Microorganisms, Boreholes.

Contents:
Another contribution to the geotectonics of Montenegro, by Z. Besic
The paleontological description of the permian faunas of the Crni Potok at Sustasi, near Bar (Montenegro) by V. Kostic-Podgorska
The paleozoic of the Bukovica and Tusina valleys (Montenegro) and its tectonic position, by A. Pavic
On the occurrence of Tortonian sediments near the village of Zdrelo and Covdin in the vicinity of Petrovac-on-Mlava (Petrovac na Mlavi) by S. Mojsilovic
Results of the first micropaleontological examinations of the Durmitor Flysch sediments, by R. Radoicic
Upper Permian Gastropods of the vicinity of Boan (Montenegro) by S. Pantic
The geology of the neighborhood of Tomasevo (Sahovici) in northern Montenegro, by D. Rubezanin
The occurrence of calcareous algae in the Upper Jurassic sediments of the neighborhood of Lastva (Trebinje) by R. Radoicic
A preliminary paper on the Oligocene microfauna from Borehole Us-6 near Ulcinj (Montenegro) by M. Canovic and R. Dzodzo-Tomic
A contribution to the knowledge of the lower cretaceous in the territory of Montenegro, by R. Radoicic
Micropaleontological description of the Higher Senonian zones of Boka Kotorska, by A. Danilova
Hydrogeology of Niksicko Polje (Montenegro) by V. Vlahovic
Geological investigations of Istrian bauxite, by S. Mojsilovic
Sedimentary-petrographic examinations of tertiary formations in the neighborhood of Petrovac-on-the-Sea (Petrovac-na-Moru) (Montenegro) by M. Dimitrijevic and V. Vucetic
The deep-sea upper cretaceous in the terrain between Bar and Budva, by M. Vidovic and others
The paleontological description of the microfauna from the neighborhood of Ulcinj, by R. Dzodzo-Tomic
The tectonic structure of the neighborhood of Ulcinj (Montenegro) by M. Vidovic
The geology of the neighborhood of Banja Koviljaca, by V. Vlahovic
The occurrence of the paleocene and deep-sea eocene in the Scaglia facies in the Montenegrin Littoral, by M. Canovic
The occurrence of the eocene between the villages of Vitasovici and Kurilo (Montenegro) by M. Zivaljevic and Z. Perovic
A contribution to the knowledge of the development of the lias on sheets Miksic 3 and Cetinje 1, by Z. Perovic and M. Zivaljevic
Material for a geological bibliography of Montenegro, by S. Milojevic.

ROCKS CHANGED HYDROTHERMALLY AS PROSPECTING INDICATORS. [1962] [26]p. (2 tables omitted).
Order from OTS or SLA $2.60 62-23750

Trans. of Vse[soyuznyi] Ge[ologicheskii] I[nstitut]. [Trudy] (USSR) 1959, v. 27, p. 322-340.

DESCRIPTORS: *Rocks, Hydrology, Thermal stresses, *Geology, *Tin, Deposits, Ores, Crystallization, Permeability, Minerals, Geophysical prospecting.

Akhmedov, A. A.
DETERMINATION OF THE DEFLECTING FORCE, TAKING TURBODRILL DEFORMATION INTO ACCOUNT [1962] 8p.
Order from ATS $8.25 ATS-71P65R

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Neft' i Gaz (USSR) 1961, v. 4,

DESCRIPTORS: *Well drilling, *Drills, Deformation.

Bublichenko, N. L.
ON THE COUVINIAN STAGE AND SOME REMARKS ON THE LOWER-DEVONIAN DEPOSITS IN GENERAL. 23 Oct 61, 36p. 37 refs.
Order from OTS or SLA $3.60 62-23281

Trans. of [Moskovskoe Obshchestvo Ispytatelei Prirody. Byulleten'. Otdel Geologicheskii] (USSR) 1961 [v. 36(66)] no. 1, p. 76-87.

DESCRIPTORS: *Paleoecology, *Geology, *Deposits, Classification, Shales, Calcite, Geography, Inland water ways, Mountains.

The article introduces a stratigraphic scheme of Mailieux - Demanet applied to the Devonian of the Ardennes; definitions of the stratigraphic terms mentioned in the scheme and widely used by West-European authors are explained. Some new data are given on the Devonian of central Czechia. In connection with this the stratigraphic position of some beds (Kryukovsky, Suryinskoye, etc.) of the lower-most strata of the Middle Devonian of the Rudny Altai are specified. The significance of the stratigraphic term "the Balkash-area stage" for the lower strata of the Lower Devonian in the north-eastern Kazakhstan is explained. (Author)

Flerov, G. N.
USE OF NUCLEAR PHYSICS IN SURVEYING AND EXPLOITING OIL AND GAS DEPOSITS (Primenenie Metodov Yadernoi Fiziki dlya Razvedki i Razrabotki Neftyanykh i Gazovykh Mestorozhdenii). [1962] 7p.
Order from OTS or SLA $1.10 AEC-tr-5404

Trans. of mono. Conference on Radioisotopes in the Physical Sciences and Industry, Copenhagen, 6-17 Sep 60. Proceedings, v. 1, 1962, p. 117-122 (STI/PUB-20).

DESCRIPTORS: *Geophysical prospecting, *Petroleum, *Oils, Gases, Deposits, Boreholes, *Well logging, *Neutrons, Particle accelerators, Pulse generators, Nuclear physics.

The paper reviews nuclear physical methods used in the USSR for the prospecting, exploration and working of mineral resources. (Author)

Gerke, A. A.
FORAMINIFERA OF THE PERMIAN, TRIASSIC, AND LIASSIC DEPOSITS OF THE OIL-BEARING REGIONS OF NORTH CENTRAL SIBERIA. [1962] 39p.
Order from ATS $52.50 ATS-53P65R

Trans. of Nauchn[o]-Issled[ovatel'skii] Inst[itut] Geol[ogii] Arktiki. Tr[udy] (USSR) 1961, v. 120, p. 18-46 and 258-262.

DESCRIPTORS: *Foraminifera, *Paleoecology, Deposits, Siberia, Geology.

Neugebauer, V. and Vig, D.
A CONTRIBUTION TO THE KNOWLEDGE OF THE SOILS OF METOHIJA (Prilog Poznavanju Zemljista Metohije) tr. by Ugo Zunjevic. 1962, 48p. 24 refs. PL-480 Agr.
Order from OTS $0.50 60-21620

Trans. of Zemljiste i Biljka (Yugoslavia) [1952] v. 1, no. 2, p. 187-232.

DESCRIPTORS: *Soils, *Soil mechanics, *Economic geology, Climate, Glaciers, Terrain, *Petrology, Plants, Swamps, *Fertility, Rock, Sand.

Rabinovich, B. I. and Kezhutin, N. G.
ELECTRICAL SOUNDING BY THE METHOD OF EXTRACTION OF FIELDS. 13 Feb 63 [17]p. 4 refs. JPRS: 17611.
Order from OTS $0.50 63-21120

Trans. of Geologiya i Geofizika (USSR) 1962, no. 5, p. 107-119.

DESCRIPTORS: *Geophysical prospecting, *Stratrigraphy, *Electric fields, Direct current, Resolution, Errors.

The differential method of DC sounding is investigated. Through analysis of errors, conclusions are drawn concerning the higher resolving power and geological effectiveness in comparison with the vertical electric sounding method. (Author)

Sattarov, M. M.
DISTRIBUTION FUNCTIONS OF RESERVOIR PERMEABILITY. [1962] 7p.
Order from ATS $8.50 ATS-70P65R

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Neft' i Gaz (USSR) 1962, v. 5, no. 6, p. 55-60.

DESCRIPTORS: *Petroleum, Deposits, Permeability, *Functional analysis, Distribution.

Schubert, E., and Nolte, D.
HYDRAULIC FRACTURING IN UNCONSOLIDATED SANDS. [Feb 63] 12p.
Order from ATS $14.80 ATS-84P64G

Trans. of Erdöl Z[eitschrift] (West Germany) 1962, v. 78, no. 8, p. 481-486.

DESCRIPTORS: *Sand, Fracture (Mechanics), *Hydraulics.

Stach, Erich.
BIOCHEMICAL COALIFICATION OF EXINITE IN MICRO-PHOTOGRAPH (Die Biochemische Inkohlung des Exinits im Mikrobild). [1962] [26]p. (foreign text included) 12 refs.
Order from SLA $2.60 62-18847

Trans. of Brennstoff-Chemie (West Germany) 1962, v. 43, no. 3, p. 71-78.

DESCRIPTORS: *Coal, Petrology, *Microphotography, Geophysics, *Plants, Fused materials, Spores, Geology.

Strakhov, N. M.
PRINCIPLES OF HISTORICAL GEOLOGY, PT. II, tr. by E. Rosenthal. 1962, 432p. 70 refs. PL-480 Int.
Order from OTS $4.50 61-31211/2

Trans. of mono. Osnovy Istoricheskoi Geologii, pt. 2, Leningrad, 1948.

DESCRIPTORS: *Geology, History, Paleoecology, Lithosphere, Earth.

Contents:
The history of the crust during the devonian period
History of the crust during the carboniferous period
The history of the crust during the permian period
Main features of the hercynic orogeny
The history of the crust during the triassic period
The history of the crust during the jurassic period
The history of the crust during the cretaceous period
History of the crust during the paleogene
The history of the crust during the neogene
History of the crust during the quaternary period
The evolution of the crust during the alpine tectonic phase
Characteristic features of tectogenesis and lithogenesis in the history of the lithosphere
The problems involved in the reconstruction of the history of the crust of the earth and their modern solutions

Timofeev, A. N.
COMPUTATION OF GRAVITATIONAL ANOMALIES IN THE COURSE OF LINEAR CHANGES OF ROCK DENSITY WITH DEPTH. [1962] [10]p. 1 ref. ACIC LD-48-k.
Order from OTS or SLA $1.10 62-15978

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1955, no. 2, p. 181-184.

DESCRIPTORS: Geophysical prospecting, *Rock (Geology), Density, *Gravity anomalies, Determination, Geology.

Physics of the Atmosphere

Borisenkov, E. P.
PROBLEMS OF THE ENERGETICS OF ATMOSPHERIC PROCESSES; TABLE OF CONTENTS. [1962] 1p. [AmMetSoc] M-RTC-30+.
Order from OTS or SLA $1.10 62-33580

Consists of annotation and partial trans. (table of contents) of mono. Voprosy Energetiki Atmosfernykh Protsessov, Leningrad, 1960, 168p.

DESCRIPTORS: *Meteorology, Literature, Indexes, Atmosphere, *Atmospheric motion, Energy, Energy conversion, Cyclones, Jet streams (Meteorology).

Kushnerevskii, Yu. V. and Mirkotan, S. F., eds.
INVESTIGATIONS OF THE IRREGULARITIES IN THE IONOSPHERE, tr. by Richard M. Holden and others. Nov 61 [160]p. 94 refs. AmMetSoc T-RC-21+; AD-287 276.
Order from OTS or SLA $11.50 62-33769

Trans. of mono. Issledovaniya Neodnorodnostei v Ionosfere, Moscow, 1960, 97p.
Another trans. is available from OTS $13.00 as AD-269 621, MCL-1044, Aug 61, 188p.

DESCRIPTORS: *Ionosphere, *Ionospheric disturbances, Motion, Statistical analysis, Ionospheric propagation, Upper atmosphere, Drift.

Mirkotan, S. F., ed.
DRIFTS AND IRREGULARITIES IN THE IONOSPHERE. June 60 [102]p. 65 refs. NASA Technical Trans. F-20; AD-237 474.
Order from OTS or SLA $9.10 60-21752

Trans. of [Issledovaniya Ionosfery i Meteorov: Sbornik Statei] (USSR) 1959, no. 1.

DESCRIPTORS: *Ionosphere, *Ionospheric disturbances, Drift, *Wind, Atmospheric motion, Ionospheric propagation, Upper atmosphere, Gases.

Contents:
Preface
Results of a study of the parameters of large-scale ionospheric irregularities by the phase method, by V. D. Gusev and others
Drift of small-scale irregularities in the F-2 layer, by Yu. V. Kushnerevskii and E. S. Zayarnaya
Original results of radiotechnical observations of the movement of irregularities in the ionosphere (winds) over Ashkhabad at altitudes of 200-300 km, by N. M. Erofeev and others
Study of the ionosphere above Khar'kov during the IGY period, by B. L. Kashcheev and others
Drifts of irregularities in the ionosphere according to observations of the Tomsk ionospheric station, by V. A. Checha and V. E. Zelenkov
Shape and movement of small irregularities in the ionosphere, by Yu. L. Kokurin.

Zverev, V. A. and Spiridonova, I. K.
ON THE QUESTION OF DETERMINING THE CHARACTERISTICS OF ATMOSPHERE TURBULENCE ON THE BASIS OF STATISTICAL ANALYSIS OF THE SOUND FIELD. [1962] [10]p. 10 refs. [DSIR] NLL M. 4997.
Order from OTS or SLA $1.10 62-25914

Trans. of #Akusticheskii Zhurnal (USSR) 1961, v. 7, no. 4, p. 428-435.

DESCRIPTORS: *Atmospheric motion, Turbulence, Determination, *Acoustics, *Sound signals, Statistical analysis, Atmospheric sounding.

The scale of non-homogeneities and mean squares of phase fluctuation were determined by measuring the correlation coefficient of the sound field in the atmosphere at points dispersed in space. The measurements were made by means of processing recordings of a signal, carried out simultaneously at four points of the field. The processing consisted of obtaining the cross correlation functions of the field with small time averaging. These were then subjected to spectral analysis, using a large time constant. In the case of a strong wind (of the order of 10 to 15 m./sec.), the scales of the non-homogeneities obtained were of the order of 1.2 to 1.6 m., while the mean squares of phase fluctuation were of the order of 130 to 150. The measurements were carried out in the 4 to 7 kc/s range. (Author)

Seismology

Ivanov, A. G.
ON THE SEISMO-ELECTRIC EFFECT OF THE FIRST KIND (J) IN THE REGION NEAR THE ELECTRODE [O Seismo-Elektricheskom Effekte Pervogo Roda (J) v Prielektrodnoi Oblasti]. [1961] 5p. 4 refs. MDF I-111.
Order from OTS $0.50 62-11280

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1949, v. 68, no. 1, p. 53-56.

DESCRIPTORS: *Seismic waves, *Electrical effects, *Electrodes, Copper electrodes, Electric potential, Rock, Electrical conductance.

Golikov, A. and Koposov, G.
A MESSAGE FROM THE EARTH: -- EXPLOSION! [1962] 10p.
Order from OTS or SLA $1.10 AEC-tr-5406

Trans. of Ogonek (USSR) 1962 [v. 40] no. 22, p. 30-32.

DESCRIPTORS: *Nuclear explosions, Explosions, *Detection, Mechanical waves, *Seismic waves, Seismographs, Earthquakes.

ENGINEERING

[CONFERENCE ON] AUTOMATIC CHECKING (KONTROL') AND ELECTRICAL MEASUREMENT METHODS [NOVOSIBIRSK, 19-23 Sep 61]. [1962] 2p. [DSIR] NLL M. 6306.
Order from OTS or SLA $1.10 62-25944

Trans. of #Priborostroenie (USSR) 1962, no. 2, p. 32.

DESCRIPTORS: Conferences, *Instrumentation, *Measuring devices (Electrical and electronic), Digital systems, Automation.

Il'in, B. V.
TWO METHODS OF REALISING THE PRINCIPLE OF AUTONOMOUS REGULATION AND A GENERAL APPRAISAL OF THESE. [1961] [15]p. 15 refs. [DSIR LLU] M 1948.
Order from OTS or SLA $1.60 61-13330

Trans. of Izvestiya Vysshikh Uchebnykh Zavedeniy Elekromekhanika (USSR) 1958, no. 11, p. 57-73.

DESCRIPTORS: *Control systems, *Automation, Design, Dynamics, Differential equations, Functions.

The paper contains the general design formulae and dynamic equations required for synthesis of Automatic control arrangements realising the conditions of interna and external autonomy where the object is described either by differential equations or by transmission functions. (Author)

Semikova, A. I.
SCIENTIFIC SEMINAR ON PNEUMATIC-HYDRAULIC AUTOMATION. 5 Feb 63 [10]p. JPRS: 17469.
Order from OTS $0.50 63-21051

Trans. of #Avtomatika i Telemekhanika (USSR) 1962 [v. 23] no. 12, p. 1720-1723.

DESCRIPTORS: Conferences, *Automation, *Pneumatic systems, *Hydraulic systems, Reports, *Abstracts.

Brief summaries are given of 37 papers presented at the fifth regular session of the All-Union seminar on pneumatic-hydraulic automation, held in Leningrad in June, 1962.

Slomyanskii, G. A.
CERTAIN QUESTIONS IN THE HISTORY OF THE DEVELOPMENT OF AIRCRAFT INSTRUMENTS, THEIR PARTS AND ELEMENTS. 23 Jan 63 [20]p. JPRS: 17257
Order from OTS or SLA $1.60 63-15357

Trans. of Aviatsionnyi Tekhnologicheskii Institut, Moscow. Trudy (USSR) 1961, v. 52, p. 20-28.

DESCRIPTORS: *Aircraft, Instrumentation, Aircraft equipment, Design, Construction, History, *Flight instruments.

Svecharnik, D.
AUTOMATION, RELIABILITY, EFFICIENCY. 14 Jan 63 [6]p. JPRS: 17119.
Order from OTS or SLA $1.10 63-15107

Trans. from Izvestiya (USSR) 1962, 15 Dec, p. 5.

DESCRIPTORS: *Industrial production, *Automation, *Reliability, Maintenance.

Chemical Engineering

COKE FROM BITUMINOUS COAL; METHOD OF DETERMINATION OF THE MECHANICAL STRENGTH BY TESTING IN A DRUM, tr. by Z. K. A. Moszynski. Apr 56 [3]p. British Coke Trans. no. 49; [DSIR] NLL M. 3364.
Order from OTS or SLA $1.10 62-24814

Trans. of Russian State Standard GOST 5953-51, gr. L 39, approved 30 July 51, date of entry 10 Jan 51 (partly replacing GOST 2669-44).

DESCRIPTORS: *Coke, Mechanical properties, Test methods, *Coal.

The method consists essentially of the testing of the coke in a drum, the cylindrical surface of which is formed of steel rods spaced 25 mm apart, and assessing the weights of the coke remaining in the drum and the particles of size less than 10 mm in the through-drum product (the material which has passed between the rods of the drum). (Author)

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 47. 12 Feb 63 [46]p. JPRS: 17595.
Order from OTS $1.25 63-21116

Trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1962 [v. 7] no. 5, p. 482-488; Narodnoe Khozyaistvo Kazakhstana (USSR) 1962 [v. 20] no. 9, p. 71-72; and from Zarya Vostoka (USSR) 1962, 27 Nov; Pravda, Moscow (USSR) 1962, 23 Nov; 25 Nov; Bakinskii Rabochii (USSR) 1962, 27 Nov; Radyans'ska Ukrayina (USSR) 1962, 14 Nov, p. 2.

DESCRIPTORS: *Industrial production, *Chemical industry, Chemical engineering, *Fertilizers, *Phosphates, Production, Synthetic fibers, *Industrial plants, Construction, *Batteries and components, Containers, Plastics, *Polyethylene plastics, *Plastic tubing, *Tires, Economics.

Contents:
New trends in the development of the chemical technology of mineral fertilizers, by S. I. Vol'fkovich
Labor-saving innovations at the Dzhambul superphosphate plant, by N. Vesel
Progress in completing the Rustavi synthetic fiber plant, by G. Baramidze
Development of a new plastic storage-battery container, by Yu. Zakharov

Production of polyethylene tubing is inadequate, by A. Samadov
News of the Karacharovskii plastics plant
Recent growth of Soviet chemical industry, by V. S. Fedorov
Production of long-life tires, by M. Onyshchenko.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL MACHINE BUILDING NO. 15. 23 Jan 63 [12]p. JPRS: 17263.
Order from OTS or SLA $1.60 63-15351

Trans. of Promyshlennost' Armenii (USSR) 1962 [v. 5] no. 11, p. 50-51; and from Pravda Ukrainy (USSR) 1962, 19 Sep, p. 3; Ekonomicheskaya Gazeta (USSR) 1962, no. 38[59] p. 46-47 (excerpts).

DESCRIPTORS: *Industrial production, Chemical engineering, Machines, *Compressors, Mobile, Compressor parts, Design, *Chemicals, Supplies.

Contents:
A new compressor design, by R. Darbinyan
To the orderers of large-scale chemicals "a green light"
Excerpts from Ekonomicheskaya Gazeta.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 46. 30 Jan 63 [29]p. JPRS: 17379.
Order from OTS $0.75 63-21020

Trans. from Ekonomicheskaya Gazeta (USSR) 1962, no. 44(65) p. 18-21, 31, 34 and no. 47(68) (1 article).

DESCRIPTORS: *Industrial production, *Chemical industry, Chemicals, Packaging, Synthetic fibers, Tires, *Polyamide plastics, Stabilization, Aging.

Contents:
Large problems of "small-scale" chemical industry
Product improvement at the Krasnoyarsk synthetic fiber plant, by G. Volkov
Defects in Baku tires, by K. Aver'yanov
Stabilization of polyamide fibers to prevent "aging"

Karaulova, E. N. and Gal'pern, G. D.
OXIDIZING METHOD OF LIBERATING SULFIDES FROM MIDDLE FRACTIONS OF PETROLEUM. [1959] 4p. 5 refs. MDF K-197.
Order from OTS $0.50 62-11485

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1959, v. 124, no. 3, p. 583-585.
Another translation is available from ATS $6.00 as ATS-36L34R [1959] 5p.

DESCRIPTORS: *Organic materials, *Petroleum, Distillation, Oxidation, Chromatographic analysis, *Sulfides, Separation.

A further development of the method of preparing libera tion of sulfides by using selective oxidation and subsequently chromatography was made on petroleum distillates. Sulfurous-aromatic concentrates from fractions of camomile oil with a 175 - 300° boiling point (fractional yield in petroleum 17.2%) were used as the object of investigation. This petroleum is a typical representative of petroleum from the Devon outcrops of the Uralo-Povolzh'. (Extracted from the report)

Komatsu, N. and Tokita, T.
METHOD FOR THE MANUFACTURE OF CYANOETHYLCELLULOSE HAVING HIGH ORIENTATION AND CRYSTALLINITY. [1962] 4p.
Order from ATS $6.50 ATS-81P65J

Trans. of [published] Japanese patent 12,016 by Nippon Rayon Co. [Aug 62].

DESCRIPTORS: *Cellulose ethers, Cyano raticals, Ethyl radicals, Cellulose, Manufacturing methods.

Kusakov, M. M. and Kosheleva, I. M.
COMPARATIVE STUDY OF THE EFFICIENCY OF SOME SURFACE-ACTIVE AGENTS IN THE DISPLACEMENT OF TUIMAZY OIL FROM POROUS MEDIA BY WATER. [1962] 9p.
Order from ATS $14.25 ATS-29P65R

Trans. of mono. Vses[oyuznoe] Soveshch[anie po] Primen[eniyu] Poverkh[nostno]-Aktivn[ykh] Veshchestv v Neft[yanoi] Prom[yshlennosti]. Ufimsk. Neft. Nauchn.-Issled. Inst. 1, 1961, Tr[udy] p. 59-68.

DESCRIPTORS: *Surface-active substances, Displacement reactions, Organic materials, *Petroleum, Recovery, Filters (Liquid), Water, Water injection.

Lissenko, K. I.
THE MODERN TREND OF OUR PETROLEUM INDUSTRY. [1962] 12p.
Available on loan from SLA 63-10415

Trans. of Russian language article from unidentified source, 1892.

DESCRIPTORS: *Petroleum industry, *Refineries, Kerosine, Petroleum, Oils, Asphalt.

Obryadchikov, S.
HEATING PETROLEUM IN TUBULAR HEATERS FOR CRACKING. [1962] [13]p.
Available on loan from SLA 63-10411

Trans. of Neft[yanoe] Khoz[yaistvo] (USSR) 1929 [no. 3] p. 357-361.

DESCRIPTORS: *Petroleum, Pyrolysis, *Heaters, Towers (Chemistry).

Orzherovskii, M., Zakharchuk, O., and Zagoruiko, V.
ELECTROCHEMICAL DESALTING OF SEA WATER. [1960] 8p. MDF O-112.
Order from OTS $0.50 62-11561

Trans. of Morskoi Flot (USSR) 1960, v. 20, no. 9, p. 24-26.

DESCRIPTORS: *Sea water, Water, *Desalination, *Electrochemistry.

Rapaport, I. B.
CHEMISTRY AND TECHNOLOGY OF SYNTHETIC LIQUID FUELS, 2D REV. ED., tr. by M. Shelef and P. Schaerf. 1962, 424p. 302 refs. PL-480 Int.
Order from OTS $4.25 61-31075

Trans. of mono. Iskustvennoe Zhidkoe Toplivo, Khimiya i Tekhnologiya, 2d rev. ed., Moscow, 1955 [546p.].

DESCRIPTORS: *Fuels, Liquids, Synthesis, Coal, Hydrogenation, Catalysts, Phase studies, Heat of reaction, Hydrocarbons, Petroleum, *Gasoline, Organic materials, Coal gas, Mineral oils, *Chemical engineering, Textbooks.

The book deals with the following problems of chemistry and technology of synthetic liquid fuels: destructive hydrogenation of solid and liquid fuel; conversion of hydrogenation products into high-quality liquid fuel; synthesis of motor fuel from hydrogen and carbon monoxide; the effect of temperature, pressure, catalyst, composition and purification of starting gas on the processes of hydrogenation and synthesis; conversion of synthesis products, their composition and quality. The book, though primarily intended as a textbook for students in the field of chemical and petroleum engineering, may also be useful to engineers working in the field of fuel processing. (Author)

Rozental, A. L.
KINETIC ANALYSIS OF CHEMICAL PROCESSES OF INTERACTION OF GASES WITH SOLID BODIES IN A FLUIDIZED BED. [1962] 5p.
Order from ATS $8.25 ATS-37P66R

Trans. of Kinetika i Kataliz (USSR) 1962, v. 3, no. 4, p. 541-544.

DESCRIPTORS: *Fluidized solids, Gases, Solids, Reaction kinetics, Chemical reactions.

Wear, R. H. and Williston, D. W.
PROCESS FOR THE PURIFICATION OF TEREPHTHALIC ACID. [1962] 10p.
Order from ATS $21.75 ATS-09P65J

Trans. of [published] Japanese patent 10,322 (6 Aug 62) by E. I. DuPont [de Nemours & Co., Inc.] (U. S.) appl. filed 12 Oct 60 as no. 41073 (Priority claims; 20 Oct 59).

DESCRIPTORS: *Phthalic acids, Purification, Processing

Civil Engineering

Berezantsev, V. G. and Yaroshenko, V. A.
DEFORMATION CHARACTERISTICS OF SAND FOUNDATION SOILS UNDER DEEP FOUNDATIONS (Osobennosti Deformirovaniya Peschanikh Osnovanii Pod Fundamentami Glubokogo Zolozheniya) tr. by G. L. Cairns. June 62 [10]p. 4 refs. DSIR Library Communication no. 1106.
Order from OTS or SLA $1.10 62-33616

Trans. of Osnovaniya, Fundamenty i Mekhanika Gruntov (USSR) 1962, v. 4, no. 1, p. 3-7.

DESCRIPTORS: *Foundations (Structures) *Sand, Deformation, *Soil mechanics.

Budnikov, P. P., Royark, S. M., and Dmitriev, A. M.
ON THE QUESTION OF THE COMPOSITION OF A BINDER HARDENING AT HIGH TEMPERATURES AND PRESSURES (K Voprosu o Sostave Vyazhushchego, Tverdeyushchego v Usloviyakh Vysokikh Temperatur i Davlenii) tr. by G. N. Gibson. July 61 [5]p. 5 refs. DSIR Library Communication no. 1059; NLL M. 4770.
Order from OTS or SLA $1.10 62-25364

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1961, v. 137, no. 2, p. 363-365.

DESCRIPTORS: *Binders, Hardening, Temperature, Pressure, *Cements.

Kanarskii, V. F.
LIMITING THE HEIGHT OF ROLLING OF WAVES ON FLAT SLOPES OF EARTH DAMS (Ogranichenie Vysoty Vskatyvaniya Voln na Pologie Otkosy Zemlyanykh Sooruzhenii) tr. by G. N. Gibson. June 61 [4]p. DSIR Library Communication no. 1062; NLL M. 4816.
Order from OTS or SLA $1.10 62-25367

Slightly abbreviated trans. of Gidroteknicheskoe Stroitel'stvo (USSR) 1960, v. 30, no. 7, p. 38-39.

DESCRIPTORS: *Dams, Construction, *Water waves, Control.

Kliopa, G. I.
EFFECT OF SPEED ON THE FORCE OF CUTTING SOIL (Vliyanie Skorosti na Usilie Rezaniya Grunta). [1962] [14]p. (foreign text included) 2 refs.
Order from OTS or SLA $1.60 62-18743

Trans. of Stroitel'nye i Dorozhnye Mashiny (USSR) 1958 [v. 3] no. 8, p. 13-16.

DESCRIPTORS: Soils, *Cutting tools, *Graders, Velocity.

At an increase in cutting speed the coefficient of depositing the soil slice in a longitudinal direction is decreased, i.e. the soil is loosened-up to a greater extent, in which case a lower coefficient of linear depositing corresponds to a larger angle of cutting. At an increase in cutting speed the displacement of the cut soil is increased, in which case greater displacement corresponds to a larger cutting angle. Over the range of speeds of 0.59 to 2.8 m/s the coefficient of external friction is decreased with increasing speed. An increase in cutting speed leads to qualitative changes in the cutting process, i.e. to a sharp decrease in the zone of plastic deformation of the soil. This means that two parallel processes take place at an increase in cutting speed: on the one hand, a sharp decrease in deformation and in the volume of deformed soil, on the other hand, speeds from zero to a maximum are imparted to the soil particles. Variations in the parameters of the working elements are strongly reflected upon the cutting forces. (Author)

Sementsov, S. A.
THE STRENGTH OF JOINTS BETWEEN WALLS AND FLOORS IN BUILDINGS CONSTRUCTED OF LARGE PANELS (Prochnost Uzlov Sopryazheniya Sten i Perekrytii v Krupnopanel'nykh Zdaniyakh) tr. by G. N. Gibson. Mar 62 [10]p. DSIR Library Communication no. 1096; NLL M. 8811.
Order from OTS or SLA $1.10 62-32806

Trans. of Beton i Zhelezobeton (USSR) 1961, no. 1, p. 14-18.

DESCRIPTORS: Panels (Structural), Buildings, Construction, *Floors, *Walls, *Joints, Mechanical properties.

Theiner, Josef.
INVESTIGATIONS INTO STATIC COMPACTION PROCESSES WITH SMOOTH ROLLERS (Untersuchungen der Statischen Walzverdichtungsvorgänge mit Glattwalzen). [1962] [33]p. (foreign text included).
Order from SLA $3.60 62-18752

Trans. of Forschungsarbeiten aus dem Strassenwesen (Germany) 1958, no. 37, p. 30-41

DESCRIPTORS: *Soils, *Soil mechanics, Earth handling equipment, *Statics, Roads, Construction.

Electrical and Electronic Engineering

ABSTRACTS FROM EAST EUROPEAN ELECTRONICS JOURNALS (1). 9 Oct 61 [54]p. JPRS: 10479.
Order from OTS or SLA $5.60 62-13218

Consists of brief descriptive abstracts of articles published in East Germany, Hungary, Poland.

DESCRIPTORS: *Abstracts, Literature, *East Germany, Hungary, Poland, *Electronics, *Electronic equipment, Communication systems.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 74 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES). 6 Feb 63 [14]p. JPRS: 17510.
Order from OTS $0.50 63-21067

Consists of abstracts of articles from the scientific and technical journals of Hungary and Poland.

DESCRIPTORS: *Abstracts, Literature, Hungary, Poland, *Electronics, Engineering, *Communication systems, Electric filters, Ferrites, Color television tubes, Modulation, Distortion, Solenoids, Coils, Electrical networks, Space flight, Telephone communication systems, Electronic circuits, Economics, Infrared equipment, Direction finding, Vibrators, Trigger circuits, Voltage, Telephone lines, Leakage detectors, Reliability (Electronics), Data, Processing.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 76 (ELECTRONICS ENGINEERING, AND SPACE RESEARCH SERIES). 12 Feb 63 [30]p. JPRS: 17583.
Order from OTS $0.75 63-21104

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia, East Germany, and Hungary.

DESCRIPTORS: *Abstracts, Literature, *East German *Hungary, *Czechoslovakia, Electronics, Engineering *Electronic equipment, *Automation, Control systems Digital computers.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 82 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES). 13 Feb 63 [8]p. JPRS: 17630.
Order from OTS $0.50 63-21132

Abstract trans. of Nachrichtentechnik (German Democratic Republic) 1963, v. 13, no. 1, p. 3-40.

DESCRIPTORS: *Abstracts, Literature, East Germany, *Electronics, Engineering, Electronic equipment, Reliability (Electronics), Transistors, Amplifiers, Semiconductors, Semiconductor devices, Test equipment, Diodes, Electric filters, Band-pass filters.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 91 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES). 26 Feb 63 [17]p. JPRS: 17807.
Order from OTS $0.50 63-21197

Consists of abstracts of articles from the scientific and technical journals of Poland, Rumania, and Yugoslavia.

DESCRIPTORS: *Abstracts, Literature, Poland, Rumania, Yugoslavia, *Electronics, Engineering, *Mechanics, Disks, Airfoils, Elastic shells, Continuum mechanics, Amplifiers, Feedback, Nonlinear systems, Electrical networks, Thermistors, Ocean currents, Floats, Anchors, Ionospheric propagation, Communication systems.

AUTOMATION AND TELEMECHANICS, 1962, VOL. 23 NO. 9: [SELECTED] TRANSLATIONS. 21 Feb 63 [90]p. JPRS: 17761.
Order from OTS $2.25 63-21184

Trans. of #Avtomatika i Telemekhanika (USSR) 1962, v. 23, no. 9, p. 1117-1140, 1144-1153, 1165-1178, 1237-1242, 1268-1269.

DESCRIPTORS: *Automation, *Control systems, Control, Rockets, Dynamics, Calculus of variations, Programming (Computers), Digital computers, *Game theory, *Machine tools, Errors, Corrections, Algorithms, Computer logic, *Mathematical logic, Symposia, *Digital systems.

Contents:
On a non-linear problem of optimum control: problem formulation, optimum control structure, first integrals, by V. K. Isaev and V. V. Sonin
On the solution of some problems of dynamic programming theory by electronic computers, by Nhuen Than Bang
Application of game theory to some problems of automatic control, II, by M. Yu. Gadzhiev
Methods of correction of dynamic errors in machine tools with program control, by B. I. Andreichikov
Minimization of logical functions of a large number of variables, by V. D. Kazakov
Chronicle: seminar on the theory and application of discrete automatic systems, by R. S. Rutman.

COMMERCIAL ELECTRONICS (Kommerzielle Elektronik) tr. by H. H. [1962] [5]p. (figs. omitted). H-9080.
Order from OTS or SLA $1.10 62-25209

Trans. of Radio und Fernsehen (German Democratic Republic) 1961 [v. 10] no. 4, p. 118-119.

DESCRIPTORS: Electronic equipment, *Radio relay systems, *Television equipment, *Air traffic control systems, *Radiotelephones, Electron tubes.

NEWS OF HIGHER EDUCATIONAL INSTITUTIONS, MINISTRY OF HIGHER AND SECONDARY SPECIALIZED EDUCATION USSR, RADIO ENGINEERING SERIES, 1962, VOL. 5, NO. 4. 12 Feb 63 [286]p. JPRS: 17580.
Order from OTS $4.00 63-21101

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiotekhnika (USSR) 1962, v. 5, no. 4, p. 415-539.

DESCRIPTORS: Electronics, Engineering, Periodicals, *Electronic equipment, *Parametric resonance, Integrators, Differentiating circuits, Radio receivers, Noise (Radio), Ionospheric propagation, Parametric amplifiers, Electrical networks, Correlation techniques, *Printed circuits, *Resistors, Transmission lines, *Signals, Detection, Delay lines, Automatic gain control, Amplifiers, Feedback, Resonators, Electron tubes, Impedance, Pentodes, Statistical processes, Digital systems, Symposia, Micro-miniaturization (Electronics), Radio equipment.

Contents:
Parametron with ferromagnetic cores, by K. M. Polivanov and others
Differentiating and integrating networks, by A. I. Petrenko and S. V. Svechnikov
Minimum noise figure of a receiver with two-circuit parametric amplifier at the input, by V. I. Yuzvinskii
On the maximum bandwidth of ionospheric scatter UHF transmission lines, by V. D. Chesnokova
Effect of magnetization fluctuations on thermonoise of a parametric ferrite amplifier of the electro-magnetic type, by M. A. Savchenko and L. A. Shishkin
Contribution to the analysis of linear networks with random-variable parameters, by Yu. K. Barsukov
On certain reversible transformations connected with the spectral representation of determined processes, by V. A. Geranin and M. I. Karnovskii
Perspective and rational designs of printed resistors in microminiature apparatus, by Yu. P. Yermolaev
Distributed excitation of a transmission line, by Yu. G. Kuleshov
Quantization in the detection of signals received in the presence of noise, by G. A. Medvedev
Electromagnetic variable delay lines with capacitor pickup, by A. G. Golubov
Obtaining a logarithmic gain characteristic in a selective amplifier by automatic gain control with the aid of the envelope of a radio pulse, by V. M. Volkov and B. P. Khizhinskii
On the theory of amplifiers with multichannel feedback, by L. Ya. Nagornyi
Dynamic method of measuring the Q of resonators using synchronous detection, by M. S. Yanovskii and Ya. L. Shamfarov
On the calculation of thermal modes of grids in vacuum tubes with oxide cathode, by Yu. V. Moskvichev and P. V. Poshekhonov
Concerning one method of blocking the channel of a radio receiver during the time of action of pulse noise, by M. Z. Arslanov
Some peculiarities in the detection of signal reflected from moving objects, by K. V. Krukovskii-Sinevich and N. M. Malyarevskii
Determination of the capacity and characteristic impedance of a symmetrical strip line with air filler, by I. S. Kovalev
Current distribution in pentodes, by E. G. Melikyan
"Normalization" in the experimental study of random processes, by V. S. Gorbenko
Pulse division device, by L. Ya. Il'nitskii and others
Inter-University Scientific-Technical Conference on Microminiaturization of Radio Apparatus (no. 1).

SOVIET DEVELOPMENTS IN ELECTRONICS. 21 Jan 63 [31]p. JPRS: 17220.
Order from OTS or SLA $3.60 63-15389

Trans. from Pravda, Moscow (USSR) 1962, 25 Nov, p. 3; Izvestiya (USSR) 1962, 25 Nov, p. 5.

DESCRIPTORS: Electronics, *Electronic equipment, *Microminiaturization (Electronics), Automation, Industrial production, Digital computers, *Molecular electronics, Generators, Surgical instruments, Recording devices.

Contents:
An important factor in technical progress, by M. Likhachev
Wonders of microelectronics, by Vladimir Orlov
On the way to automating mental work, by K. Karandeev
Mainline of progress, by A. Shokin
Brain of automation, by Yu. Vasilevskii
Molecular generators
What can electronics do
Surgical recorder.

SOVIET REPORTS ON BLOCK CIRCUITS AND THEORY OF SEQUENCES. 6 Feb 63 [19]p. 5 refs. JPRS: 17504.
Order from OTS $0.50 63-21063

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 144, no. 6, p. 1237-1244.

DESCRIPTORS: *Switching circuits, Circuits, Electric terminals, Test methods, *Sequences, Number theory, Mathematical logic, Algebra, Special functions.

Contents:
Design of tests for block circuits by V. V. Glagolev
The P-Adic method in the theory of sequences, by A. G. Lunts

STATISTICAL METHODS OF RESEARCH: SELECTED ARTICLES. 31 Dec 62 [46]p. 18 refs. FTD-TT-62-1192.
Order from OTS or SLA $4.60 63-15295

Unedited rough draft trans. of mono. Statisticheskie Metody Issledovaniya, Teoriya Struktur, Modelirovanie, Terminologiya, Obrazovanie, Moscow, 1961, p. 106-124 and 357-367.

DESCRIPTORS: *Statistical processes, Quality control, *Servomechanisms, Non-linear systems, Design, Functions, *Relays, Synthesis, Analysis, Control systems.

Contents:
Joint stability and quality control and its application in statistical dynamics, by I. Nekolny and J. Benes
Mechanization of analysis and synthesis of relay apparatus, by V. G. Lazarev and P. P. Parkhomenko.

STUDY OF REDUNDANT AUTOMATIC SYSTEMS. 12 Feb 63 [49]p. 13 refs. JPRS: 17577.
Order from OTS $1.25 63-21098

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Energetika i Avtomatika, 1962, no. 6, p. 150-170.

DESCRIPTORS: Automatic, *Electronic equipment, *Reliability (Electronics), Operation, Life expectancy.

Contents:
The readiness factor and optimum checking period for redundant automatic systems, by A. A. Slepov
Reliability of redundant apparatus, by A. L. Garkavi and V. B. Gegolevskii
The question of fractional redundancy, by I. P. Paderno.

SUCCESSIVE APPROXIMATION METHODS FOR SOLVING OPTIMALITY PROBLEMS. 12 Feb 63 [27]p. 5 refs. JPRS: 17589.
Order from OTS $0.75 63-21110

Trans. of Zhurnal Vychislitel'noi Matematiki i Matematicheskoi Fiziki (USSR) 1962, v. 2, no. 6, p. 1132-1144.

DESCRIPTORS: Control, *Control systems, *Numerical methods and procedures, Calculus of variations, Equations of motion, *Electrical networks, Synthesis, Algorithms, Linear programming, Operations research

Contents:
On a method of successive approximations for the solution of optimal control problems, by I. A. Krylov and F. L. Chernous'ko
A successive search technique for the approximate solution of certain optimal planning problems, by I. P. Motskus.

THICK ALUMINIUM OXIDE COATINGS: METHOD OF OBTAINING THE ALUMINIUM OXIDE AND THE APPLICATION OF THE ALUMINIUM OXIDE LAYER TO INSULATION ON ELECTRICAL CONDUCTORS. [1962] 3p.
Order from OTS or SLA $1.10 62-18555

Trans. of French patent 440,516, 5 May 11.

DESCRIPTORS: *Aluminum compounds, Oxides, Coatings, *Electric insulation, *Insulating materials, *Electric wire.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 33. 15 Jan 63 [11]p. JPRS: 17144.
Order from OTS or SLA $1.60 63-15095

Trans. from Trud, Moscow (USSR) 1962, 19 Sep, p. 2; Pravda, Moscow (USSR) 1962, 9 Oct, p. 2; Pravda Ukrainy (USSR) 1962, 18 Sep, p. 2; 19 Sep, p. 3; Sovetskaya Litva (USSR) 1962, 19 Sep; Ekonomicheskaya Gazeta (USSR) [1962] no. 42[63] p. 2.

DESCRIPTORS: *Industrial production, *Electrical equipment, *Economics, Labor, Supplies, Blast furnaces, Construction, Air conditioning equipment, Water heaters, Fans, *Control panels, Petroleum industry, Turbines, *Generators, Electric wire.

Contents:
Violations of working schedules at enterprises of the Latvian sovnarkhoz, by I. Rumova
Delays in delivery of electrical equipment for construction of blast furnace at Krivorozhstal' plant
New electrical home appliances produced by Khar'kovskii sovnarkhoz enterprises, by S. Leonidov
Control panels for pumping stations and petroleum pipelines produced by Zhitomer electrical instruments plant
Briefs on new electrical equipment
Delays in supply of electrical wire by Beloretsk metallurgical combine, by N. Maksyuchenko.

Aleksandrov, K. B.
LIMITING THE SWITCHING SURGES ON ELECTRIC ROLLING STOCK (Organichenie Kommutatsionnykh Perenapryszhenii na Elektropodvizhnom Sostave). 28 July 61 [8]p. Trafford Park trans. no. 2983; [DSIR] NLL M. 3467.
Order from OTS or SLA $1.10 62-24819

Trans. of Elekt[richeskaya i] Teplovoz[naya] Tyaga (USSR) 1960, no. 12, p. 15-17.

DESCRIPTORS: *Electric machinery, *Electric insulation, Voltage, Control.

Operating experience of dc electric rolling stock has shown that none of the measures aimed at reducing the switching surges and increasing the level of the circuit insulation, when taken in isolation, can guarantee safe and accident-free operation. Consequently that method which envisages a simultaneous increase in the level of the insulation and a safe reduction of the over-voltages, should be considered as the only correct one. (Author)

Azarev, D. I.
LONG-DISTANCE POWER TRANSMISSION WITH SATURABLE REACTOR-TRANSFORMERS AND FORCED CAPACITOR BANKS. [1962] [12]p. 9 refs. C. E. Trans. 2238; [DSIR] NLL M. 6327.
Order from OTS or SLA $1.60 62-25959

Trans. of Elektrichestvo (USSR) 1961, no. 7, p. 24-30.

DESCRIPTORS: *Transmission lines, Design, *Transformers, *Saturable reactors, *Capacitors, Switches, Electrical properties, Costs.

The maintenance of the desired voltage at intermediate points on the power line is carried out more quickly than in a system with synchronous condensers, and this increases the transmission capacity and stability of the power line. The proposed system does not involve any rotating machines, and, as may be imagined, is therefore simpler and more reliable in operation. The proposed system requires fewer capacitors and high voltage switchgear units than a system with longitudinal compensation. Overvoltage surges are limited, and it is therefore possible to reduce the requirements for line insulation and its associated equipment. This system makes it possible, from the very first days of operation, to supply consumers in the areas adjacent to the power line, while at the same time having the possibility of operating at maximum transmission power, without additional equipment costs. (Author)

Blokh, A. Sh.
ON SYNTHESIS WITH A MINIMUM NUMBER OF CONTACTS. [1961] 3p. 3 refs. MDF B-175.
Order from OTS $0.50 62-11565

Trans. of A[kademiya] N[avuk] BSSR [Minsk]. Doklady, 1960 [v. 4] no. 11, p. 447-449.

DESCRIPTORS: *Electrical networks, Circuits, Synthesis, Electric terminals, Matrix algebra, Networks.

A general proposition is formulated with which the question of whether a given circuit is a minimum in the quantity of contacts can be solved in a number of cases. (Author)

Boev, N. M.
WORKING OF CARRIER CLAMP OF TYPE PG-5-10A UNDER CONDITIONS OF RELEASE OF SPLIT PHASE CABLES. [1962] [9]p. 4 refs. C. E. Trans. 2308; [DSIR] NLL M. 6171.
Order from OTS or SLA $1.10 62-25934

Trans. of Elekt[richeskie] Stantsii (USSR) 1961 [v. 32] no. 7, p. 57-61.

DESCRIPTORS: *Transmission lines, Cables, Towers, *Clamps, Design, Tests.

On a 500 kV electrical transmission lines tests were carried out on intermediate pylons by subjecting them to dynamic loads under conditions of simultaneous release of outer phase cables, suspended in carrier clamps of type PG-5-10A. In all, three tests were carried out at an initial calculated stress of 11 tons per phase ($t = -10^{o}C$). The tests were made by artificial breaking-away of the phase cables in an anchoring pylon by means of a releasing device placed between the traverse of the pylon and a three-radial balance beam, by which the simultaneousness of the breaking-away of the three cables of the phase was secured. During the test the transitional values of dynamic forces in the supporting chains (garlands) (using electrodynamometers with recording on oscillographs) and deflection angles of chains (by filming) were measured. (Author)

Braun, Georg.
APPARATUS FOR THE PRODUCTION OF ELECTRICITY BY THE INFLUENCE (INDUCTION) OF STREAMING AND EXPANDING VAPOR. [1962] [6]p.
Order from OTS or SLA $1.10 62-18260

Trans. of German patent 329,422, 23 Nov 20, pat. from 22 Mar 17.

DESCRIPTORS: *Electricity, Production, Water vapor, Steam, Induction systems.

Bystrov, G. N.
TO THE QUESTION OF THE DEPENDENCE BETWEEN THE OBSERVABILITY OF AN OBJECT AND THE NUMBER OF 'ILLUMINATING' IMPULSES [K Voprosu o Zavisimosti Mezhdu Nablyudaemost'yu Ob''ekta i Chislom "Osveshchayushchikh" Impul'sov]. [1961] 5p. 3 refs. MDF B-126.
Order from OTS or SLA $1.10 62-23058

Trans. of Radiotekhnika (USSR) 1956, v. 11, no. 2, p. 74-76.

DESCRIPTORS: Radar stations, *Radar receivers, *Noise (Radar), Signal-to-noise ratio, Probability, Radar equipment.

The probability in analyzed of detecting an object in a fluctuating noise background depending on the number of high-frequency energy pulses incident upon it. The analysis is made taking into account the statistical properties of the fluctuating noise and the probability of detecting the object is determined as the addition, up to one, of the probability of the appearance of fluctuating projections at the observation point. The relation between the probability of detecting the object, the distance, the receiver sensitivity and the transmitter power is given in the appendix. (Author)

Deryugin, N. G. and Voronetskii, G. V.
RESTORATION OF QUENCHING AND SYNCHRONIZING PULSES IN THE VIDIO SIGNAL AFTER MAGNETIC RECORDING. 7 Nov 62 [10]p. 2 refs. FTD-TT-62-1342.
Order from OTS or SLA $1.10 63-15282

Unedited rough draft trans. of Tekhnika Kino i Televideniya (USSR) 1961 [v. 5] no. 10, p. 38-41.

DESCRIPTORS: *Video signals, *Magnetic recording systems, *Synchronization (Electronics), *Pulse amplifiers, Amplifiers.

A method is given of restoring quenching and synchronizing pulses in the full video signal after reading from magnetic tape. The block diagram and basic technical characteristics of the shaping device are presented. (Author)

Drozhilov, K. G.
THE R-50-130-1 STEAM TURBINE. USSR Industrial Development: Soviet Power Machinery no. 8. 5 Feb 63 [6]p. JPRS: 17475.
Order from OTS $0.50 63-21057

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 9, p. 44-46.

DESCRIPTORS: *Industrial production, *Power equipment, *Steam turbines, Design, Generators, Turbine parts.

A description is given of a single cylinder, back pressure R-50-130-1 steam turbine with a nominal capacity of 50 million watts at 3,000 rpm, operating on standard parameters of live steam at 130 atmospheres and 838° K with an exhaust pressure from 10 - 18 ± 3 atmospheres. The turbine is intended for starting 60 million watt turbogenerators and supplying chemical) and petroleum industry enterprises which have a requirement for such turbine installations.

Fomin, L. A.
FALSE TARGETS ON RADAR INDICATOR SCREENS. 21 Aug 61 [12]p. MCL-982; AD-265 662.
Order from OTS or SLA $1.60 62-13299

Unedited rough draft trans. of Vestnik Protivovozdushnoi Oborony (USSR) 1961 [v. 1] no. 1, p. 52-56.

DESCRIPTORS: Radar equipment, Plan position indicators, Radar signals, Identification, *Radar interference, Antenna radiation patterns, *Radar pulses, *Radar reflections, Mathematical analysis.

Clear pips similar in shape to target pulses are sometimes observed in the operation of a radar. These may actually be target pulses, but they arrive upon random coincidence of the synchronization of two stations-one zone and an adjacent one. I relate this to the fact that the operator does sometimes find a target at the same azimuth after the observation of such pulses. However, if it is possible to receive a reflected pulse radiated by another station of identical type, can this be employed to increase the range of target detection. (Author)

Forwald, H.
COMPRESSED AIR CIRCUIT BREAKER, tr. by J. R-P. 28 Nov 62, 4p. (fig. omitted).
Order from OTS or SLA $1.10 63-13430

Trans. of Swedish patent 151,019, cl. 21 c:35/10, by Allmana Svenska Elektriska AB, appl. 31 Dec 52, granted 26 May 55, pub. 9 Aug 55.

DESCRIPTORS: *Circuit breakers, Compressed air, Electrical equipment.

Glazenko, T. A.
CALCULATION OF A TRI-PHASE HEATER WITH ANGULAR ELECTRODES. 7 Nov 62 [12]p. 6 refs. FTD-TT-62-1345.
Order from OTS or SLA $1.60 63-13682

Unedited rough draft trans. of Sel'skokhozyaistvennyi Institut, Leningrad. Zapiski (USSR) 1956, v. 12, p. 199-208.

DESCRIPTORS: *Heaters, Electric fields, Electrodes, Electric potential , Alternating current, Electrical equipment.

The field in the central zone 1 of a tri-phase electrode preheater appears to be rotating, elliptical. In zones between sections of electrodes, extending from the corresponding peaks by more than 0.5 d, the field can be considered as pulsating. The derived formulas allow, with sufficient practical accuracy, to calculate the power scattered by a tri-phase electrode preheater. The described method of determining power, scattered in the zone of rotating field, can be utilized in calculating polyphase preheaters with electrodes of different form. (Author)

Gleizer, M. D.
REINFORCING THE INSULATION OF ELECTRIC POWER LINES IN AREAS OF INTENSE ATMOSPHERIC POLLUTION. [1962] [9]p. 4 refs. C. E. Trans. 2465; [DSIR] NLL M. 6168.
Order from OTS or SLA $1.10 62-25932

Trans. of Elekt[richeskie] Stantsii (USSR) 1961, v. 32, no. 10, p. 61-65.

DESCRIPTORS: *Transmission lines, *Atmospheric pollution, *Electric insulation, Design, Electrical properties.

In areas of intensive atmospheric pollution by chemical and other deposits, the use of composite insulator assemblies, in which some of the insulators are arranged vertically and others horizontally, is recommended. The flashover characteristics of these insulator assemblies, in clean conditions, are approximately the same as those of normal insulator strings containing the same number of insulators, but their insulating characteristics when contaminated with atmospheric deposits are considerably better than those of normal insulator strings. Composite insulator assemblies are fouled less readily than normal suspension strings, and the insulation loads are distributed over them more uniformly. (Author)

Ivakhnenko, A. G.
CORRELATION METHODS IN CYBERNETIC SYSTEMS OF AUTOMATIC CONTROL [AND] APPENDICES I-II: ENGINEERING CYBERNETICS. [1962] [20]p. 12 refs. [DSIR] NLL M. 4993.
Order from OTS or SLA $1.60 62-25912

Trans. of Avtomatyka (USSR) 1960, no. 2, p. 20-35.

DESCRIPTORS: *Cybernetics, *Automation, Control systems, *Correlation techniques, Statistical functions, Noise, Servosystems, Electronic equipment, Oscillations, Modulation, Circuits.

The application of the "relay type" correlation function instead of the usual proportional ones makes it possible to simplify the control apparatus (especially the multiplying and relay devices). The relay functions can be used to determine the system characteristics without

applying artificial disturbances, and to determine the sig of the deflection of the system from the estremum point If the noises represented in the manipulated variable M satisfy in respect to frequency, they can be used instead of the continuous test signal in the modulation extremum system. The normal hunting of a guidance or servo-system can be used for these purposes. The noises can be used in an output sampling extremum regulator as well. These systems without special test signals show new examples of feedback cybernetic or adaptive systems. The most perfect systems can be obtained on adding feedforward links adjusted for invariantness conditions. (Author)

Kapp, Robert.
METHOD FOR ESTABLISHING CONNECTIONS BETWEEN VARIOUS MEMBERS OF COMPLICATED ELECTRICAL APPARATUS AND THE PRODUCT OBTAINED BY THIS METHOD. [1962] 5p. (figs. omitted).
Order from OTS or SLA $1.10 62-18410

Trans. of French patent 686, 445, appl. 11 Dec 29, granted 14 Apr 30, pub. 25 July 30.

DESCRIPTORS: *Electric connectors, Electrical equipment.

Kataev, S. I. and Khromov, L. I.
A GENERALIZED CRITERION FOR EVALUATING IMAGE QUALITY. [1962] 4p.
Order from ATS $5.00 ATS-09P66R

Trans. of Tekhnika Kino i Televideniya (USSR) 1962, v. 6, no. 4, p. 17-18.

DESCRIPTORS: *Images, Communication equipment, Television equipment, Quality control.

Kelendzheridze, D. L.
ON THE THEORY OF OPTIMAL TRACKING. 3 May 62 [8]p. 3 refs. FTD-TT-62-484.
Order from OTS or SLA $1.10 62-32293

Unedited rough draft trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 138, no. 3, p. 529-532.

DESCRIPTORS: *Tracking, *Control systems, Theory, Equations of motion, Algebraic topology, Vector analysis, Functions.

The theorem proved gives a complete system of necessary conditions satisfied by any optimum trajectory pair with the assumptions that the equations of motion be linear, not degenerate, and that set Ω^r be a convex closed polyhedron of r-dimensional space.

Klyuver, N. F. and Reshetnikov, D. V.
AUTOMATIC FREQUENCY CONTROL WITH ECONOMIC LOAD DISTRIBUTION. [1962] [10]p. C. E. Trans. 2411; [DSIR] NLL M. 6332.
Order from OTS or SLA $1.10 62-25960

Trans. of Elekt[richeskie] Stantsii (USSR) 1961 [v. 32] no. 1, p. 44-49.

DESCRIPTORS: *Electric power production, *Power plants, Power, Frequency, Distribution, *Remote control systems, Design, Variable capacitors, Control panels.

Koblova, M. M. and Moskvina, L. V.
INVESTIGATION OF NONRECIPROCAL PHASE SHIFTS IN A COAXIAL LINE WITH A FERRITE. [1960] 6p. 5 refs. MDF K-215.
Order from OTS $0.50 62-11468

Trans. of #Radiotekh[nika] i Elektr[onika] (USSR) 1960, v. 5, no. 1, p. 162-166.

DESCRIPTORS: *Coaxial cables, *Phase shifters, *Ferrites, Dielectrics.

Certain computational results of an investigation of the plane-parallel analog of a coaxial line containing a ferrite-dielectric plate are explained. It is shown that there exists an optimum configuration of a ferrite-dielectric plate to obtain a maximum nonreciprocal phase shift. Some experimental results are presented. (Author)

Korenberg, E. B.
ON CERTAIN GENERAL PROPERTIES OF ANTENNA DIRECTIVITY CHARACTERISTICS. [1959] 5p. 5 refs. MDF K-200.
Order from OTS $0.50 62-11469

Trans. of #Radiotekh[nika] (USSR) 1959, v. 14, no. 9, p. 13-16.

DESCRIPTORS: *Antenna radiation patterns, Antennas, Polarization.

It is shown that mutual orientations always exist for coupled receiving and transmitting antennas in free space, for which coupling is absent and the polarization properties have been determined of directivity characteristics of antennas without energy nulls. (Author)

Kovalevskaya, Ya. P.
ARC-BACKS IN SERIES-CONNECTED RECTIFIER UNITS. [1962] [11]p. 4 refs. C. E. Trans. 2556; [DSIR] NLL M. 8824.
Order from OTS or SLA $1.60 62-32814

Trans. of Elektrichestvo (USSR) 1951, no. 7, p. 33-38.

DESCRIPTORS: *Rectifiers, Electric current, Voltage, Circuits, Analysis.

The series connection of rectifier units in rectifier installations reduces the likelihood of damage due to arcing-back. A method is proposed for calculating the possibility of arcing-back in a single rectifier unit and in several rectifier units connected in series. A relation is established between the possibility of arcing-back and the circuit characteristics of the rectifier installation. Details are given of the results of an experimental investigation which confirm the results of calculations made in accordance with the proposed method. (Author)

Koval'skaya, O. T., Lavrukhin, A. M. and others.
A COMPARISON OF CORONA LOSSES ON DC AND AC TRANSMISSION LINES WITH IDENTICAL BUNDLE CONDUCTORS (Sravnenie Poter'na Koronu na Liniyakh Peredachi Peremennogo i Postoyannogo Toka s Odinakovymi Rasshchyplennymi Provodami) tr. by G. Belkov. 1962, 9p. 10 refs. NRCC Technical trans. 1047.
Order from NRCC $0.50 NRCC C-4130

Trans. of Nauchno-Issled[ovatel'skii] Inst[itut] Postoyan[nogo] Toka. Izvest[iya] (USSR) 1960, v. 6, p. 155-163.

DESCRIPTORS: *Electrical corona, *Transmission lines, Electric cables, Meteorology.

Kurilin, B. I.
ON THE QUESTION OF ESTIMATING THE NOISE QUALITIES OF HIGH-FREQUENCY AMPLIFIER TUBES. [1960] 2p. 2 refs. MDF K-217.
Order from OTS $0.50 62-11463

Trans. of #Radiotekhnika (USSR) 1959, v. 14, no. 12, p. 44.

DESCRIPTORS: High frequency, Amplifiers, *Electron tubes, *Noise (Radio).

Instead of using the parameter $R_n g_r$, where R_n is the tube noise resistance, g_r the conductance of the grid-cathode section due to the electron inertia and the input inductance, the noise quality of a tube can more expediently be estimated by the quantity $\gamma = R_n/a$, which is not frequency dependent and is determined entirely by the tube construction. The relation between $R_n g_r$ and γ is $R_n g_r \frac{R_n}{a\lambda^2} = \frac{\gamma}{\lambda^2}$, from which $\gamma = R_n g_r \lambda^2$. The noise coefficient γ for different kinds of high frequency tubes is tabulated.

Maslennikov, N. M.
INVESTIGATION OF THE IGNITION OF A SECTIONALISED HIGH-VOLTAGE VALVE. [1962] [8]p. 2 refs. C. E. Trans. 2287; [DSIR] NLL M. 6013.
Order from OTS or SLA $1.10 62-25924

Trans. of Elektrichestvo (USSR) 1960, no. 6, p. 25-29.

DESCRIPTORS: *Transmission lines, Electrical equipment, *Valves, Ignition, *Mercury electrodes.

Migulin, V. V., Lopukhin, V. M., and Gusev, V. D.
ALL-UNION CONFERENCE OF THE MINISTRY OF HIGHER AND INTERMEDIATE SPECIAL EDUCATION OF THE USSR ON RADIO ELECTRONICS (NO. 4) KHAR'KOV, 24-29 OCT 60. [1962] 4p. [DSIR] NLL M. 4829.
Order from OTS or SLA $1.10 62-24873

Trans. of Moscow U. Vestnik. Seriya [3]: Fizika, Astronomiya (USSR) 1961 [v. 16] no. 1, p. 82-84.

DESCRIPTORS: Conferences, Electronics, *Superhigh frequency, *Quantum mechanics, *Radio astronomy, *Semiconductor devices.

Minakova, I. I. and Stepanova, N. V.
SYNCHRONIZATION OF A REFLEX KLYSTRON. [1961] 6p. MDF M-114.
Order from OTS $0.50 62-11613

Trans. of Radiotekh[nika] i Elektr[onika] (USSR) 1956, v. 1, no. 6, p. 805-808.

DESCRIPTORS: *Reflex klystrons, Klystrons, *Synchronization (Electronics).

The synchronized operating regions of a klystron generator under the effect of a small external emf are investigated theoretically (Teodorchik method) and experimentally. It is shown that the shape of the amplitude curve and the synchronization band width depend essentially on the transit angle. The synchronization band width and the maximum value of the amplitudes increase as the deflections of the transit angle from the optimum increase for a constant ratio of the amplitude of the external force to the amplitude of the free self-oscillations. (Author)

Mobius, H. H.
HIGH TEMPERATURE ELECTRODES FOR CELLS WITH SOLID ELECTROLYTES, ESPECIALLY FUEL CELLS. 1963.
Order from TTIS $6.00 TTIS NS 65

Trans. of East German patent 22,030, appl. 20 May 58, pub. 10 Oct 61.

DESCRIPTORS: *Fuel cells, *Electrodes, *Heat resistant materials, Electrolytes.

O[g]oshi, Akio and Sumiyoshi, H.
METHOD OF FUSION-SEALING SEMI-CONDUCTOR APPARATUS. [1962] 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-18828

Trans. of published Japanese patent 36-13873, 19 Aug 61, appl. no. 34-3381, 2 Feb 59, by Sony Corp. Other translations are available from WBI, 1 Sep 61 and from OTS or SLA $1.10 as 62-16322, 1 Sep 61 [4]p.

DESCRIPTORS: *Semiconductors, Encapsulation, Seals, Glass, Particles, *Boric acid. Anhydrides.

Pensa, F. N.
ELECTRODES (FOR ARC FURNACES). [1961].
Order from BISI £9 BISI-943

Trans. of l'Acierie Electrique [sic] 1957 (Cahiers du Cessid) no. 1, pt. 3, p. 1-51.

DESCRIPTORS: *Electrodes, Electric furnaces, Electrical equipment.

Popper, Josef.
DEVICE FOR PRODUCING ELECTRICITY BY MEANS OF STREAMS OF LIQUIDS FLOWING THROUGH MAGNETIC FIELDS. [1962] [6]p.
Order from OTS or SLA $1.10 62-18301

Trans. of German patent 103,706, 26 June 1899, pat. from 21 May 1898.

DESCRIPTORS: *Electricity, Production, Liquids, Fluid flow, Magnetic fields.

Rosenthal, W.
FURNACE TRANSFORMERS. Jan 63.
Order from BISI £3 15s BISI-3113

Trans. of Siemens Zeitschrift (West Germany) 1960, v. 34 [no. 2] p. 96-104.

DESCRIPTORS: *Electric furnaces, *Transformers, Electric potential, Control.

Rybnikov, S. I.
CERTAIN PROBLEMS IN THE THEORY OF MULTIVARIABLE LINEAR AUTOMATIC CONTROL SYSTEMS. 7 Nov 62 [14]p. 4 refs. FTD-TT-62-1384.
Order from OTS or SLA $1.60 63-15281

Unedited rough draft trans. of [Aviatsionnyi Institut, Moscow. Trudy] (USSR) 1961, v. 139, p. 119-128.

DESCRIPTORS: Automatic, *Control systems, Linear systems, Theory, Synthesis, Differential equations, Functions, Integral transforms.

A number of relationships are established between the linear equations of a multivariable closed-loop automatic control system, its controllers, and the controlled object. Several applications of the relations thus obtained were considered. The relationships can be used in the analysis and synthesis of multi-variable linear automatic control systems without additional disturbances. (Author)

Sokolov, A. V. and Polukhin, V. A.
MOSCOW-SMOLENSK RADIO RELAY LINE. 17 Feb 60 [11]p. [US]ASIA SC-104c/59.
Order from OTS or SLA $1.60 62-32787

Trans. of #Vestnik Svyazi (USSR) 1959 [v. 19] no. 9, [234] p. 5-7.

DESCRIPTORS: *Radio relay systems, *Television communication systems, *Telephone communication systems, Radio relay stations, Electronic equipment, Design, Operation.

The Moscow-Smolensk radio relay line is here described. The principal characteristics of the line are cited and information regarding adjustments and use is also given. The radio relay line is equipped with an R-60 device and is being used at the present time for sending programs from the Moscow television center to the relay station in Smolensk. (Author)

Vilesov, D. V. and Ryabinin, I. A.
MARINE SELF-EXCITING SYNCHRONOUS GENERATORS: SELECTED ARTICLES. 23 Jan 63 [27]p. JPRS: 17252.
Order from OTS or SLA $2.60 63-15400

Trans. of mono. Sudovye Samovozbuzhdayushchiesya Sinkhronnye Generatory, Moscow, 1962, p. 3-13, 159-167, 179-180.

DESCRIPTORS: Shipborne, *Power equipment, Generators, Operation, Rectifiers, Semiconductor devices.

Contents:
Foreword
Introduction
Operating principles of self-exciting synchronous generators
Conclusions
Table of contents.

Viter, V. V. and Kul'kov, K. V.
MEASUREMENT OF THE AUTO-CORRELATION COEFFICIENT OF THE EXCESS OF THE THRESHOLD LEVEL BY A RANDOM SIGNAL USING PULSE COUNTERS. [1962] [6]p. 1 ref. [DSIR] NLL M. 4996.
Order from OTS or SLA $1.10 62-25913

Trans. of #Radiotekhnika (USSR) 1961, v. 16, no. 6, p. 40-44.

DESCRIPTORS: Measuring devices (Electrical and Electronic), *Pulse counters, Signals, *Correlation techniques.

The authors consider a technique for calculating the auto-correlation and the correlation function of the amplitudes of a random sequence of pulses, exceeding a certain threshold level, based on measurement of the mean frequency for activating the threshold level and its additive components. (Author)

Zoz, N. I., Ryabov, M. S., and Fel'dman, L. I.
THE PROBLEM OF THE ARTIFICIAL LIGHTING OF FACTORY BUILDINGS WITH NO NATURAL DAYLIGHTING; THE ELECTRIC LIGHTING OF WINDOWLESS BUILDINGS; THE LIGHTING OF DESKS IN DESIGN AND DRAWING OFFICES BY MEANS OF REFLECTED LIGHT (K Voprosu ob Iskusstvennom Osveshchenii Promyshlennykh Zdanii bez Estestvennogo Sveta; Elektricheskoe Osveshchenie Bezokonnykh i Besfonarnykh Zdanii; Osveshchenie Proektno-Konstruktorskikh i Kopiroval'nykh Rabot Otrazhennym Svetom) tr. by G. L. Cairns. Sep 61 [13]p. (refs. omitted). DSIR Library Communication 1100; NLL M. 8807.
Order from OTS or SLA $1.60 62-32798

Trans. of Svetotekhnika (USSR) 1960, v. 6, no. 11, p. 19-21; no. 12, p. 17-20; 1961, v. 7, no. 1, p. 29-30.

DESCRIPTORS: Buildings, *Lighting equipment, *Illumination, Reflection, Incandescent lamps.

Mechanical Engineering

Buzek, Z. and Hlineny, J.
THE ENERGY BALANCE OF ELECTRIC ARC-FURNACES AND THE SCOPE FOR REDUCING THEIR THERMAL LOSSES. Jan 63.
Order from BISI £5 5s BISI-2956

Trans. of Vysoka Skola Banska. Sbornik Vedeckych Praci (Czechoslovakia) 1961, v. 7, no. 7, p. 735-748.

DESCRIPTORS: *Electric furnaces, Electric arcs, Energy, Cooling, Thermal insulation, Aluminum coatings.

Zusmanovich, L. B.
CLEANING STEAM TURBINE CONDENSERS WITH RUBBER BALLS. [1962] [11]p. 2 refs. C. E. Trans. 2329; [DSIR] NLL M. 4887.
Order from OTS or SLA $1.10 62-25387

Trans. of Elekt[richeskie] Stantsii (USSR) 1961, v. 32, no. 3, p. 26-33.

DESCRIPTORS: *Steam turbines, *Condensers (Liquefiers), *Steam condensers, Pipes, *Cleaning, Spheres, Rubber, Jet pumps.

Tests have been carried out on continuous plants using rubber balls for cleaning the condensers of steam turbines in Russian power stations. It has been shown that they require low capital and operating costs and they clean very efficiently by removing organic deposits and scale. Considerable advantages in comparison with other cleaning methods for the condensers of steam turbines recommend their extensive use in power stations. To ensure normal plant operation it is necessary to carry out certain specific requirements, the most important being: to put the water intake gratings in good order, to carry out a careful preliminary cleaning and to calibrate the condenser tubes. The plant is most advantageously switched on directly after the turbo-plant is assembled. In this case an increased efficiency is attained, the installation of the plant is simpler and the preliminary steps required are easier. (Author)

Ordnance, Missiles, and Satellite Vehicles

EARTH-SPACE-EARTH: SELECTED ARTICLES. 11 Oct 62 [45]p. FTD-TT-62-1416.
Order from OTS or SLA $4.60 63-13895

Unedited rough draft trans. of mono. Zemlya-Kosmos-Zemlya, Moscow, 1962, p. 10, 13-14, 27, 30-31, 45-47, 51-52, 56-57, 61 (Sbornik Materialov, Opublukovannykh v Gazeta "Pravda", 1962, 96p.).

DESCRIPTORS: *Satellite vehicles, Satellite vehicle research, *Space flight, *Orbital flight paths, *Manned spacecraft, Astronauts, Food.

Contents:
"Vostok-3" in outer space
News from outer space
"Vostok-4" in orbit
News from outer space
Research program is being excuted successfully
Conversation in outer space
"Food of gods"
Precisely according to program
Before the completion of a historical flight
Good wishes to nations of the world.

Behrens, Friedrich.
BLANK CARTRIDGE, tr. by P. C. C. 13 June 62, 4p. (3 figs. omitted).
Order from OTS or SLA $1.10 62-25682

Trans. of German patent 91,591, cl. 72, pat. from 17 Mar 1896, pub. 30 Apr 1897.

DESCRIPTORS: *Cartridges, Cartridge cases, Design.

Kirillov, V. I.
BOMBING. 28 Sep 62 [426]p. FTD-TT-62-235; AD-287 703.
Order from OTS or SLA $22.25 63-13182

Unedited rough draft trans. of mono. Bombometanie, Moscow, 1960, 376p.

DESCRIPTORS: *Bombing, Exterior ballistics, Bombsights, Optical sights, Bomb trajectories, Errors, Night bombing, Dive bombing, Toss bombing.

Contents:
Introduction
Part one: theoretical fundamentals and bombing technique
The ballistics of the aerial bomb
Theoretical foundations of bombing from horizontal flight
Bombing with the aid of optical bombsights
Bombing with the aid of radar bombsights
Night bombing using optical bombsights
Preparation and execution of bombing flights; special points for bombing under various conditions
Dive bombing and pullout bombing
Toss bombing
Part two: characteristics of effectiveness of bombing
Elementary information from probability theory
Scattering in bombing. Determination of probability of hits
Determination of expected result of bombing and aircraft required to execute an assigned bombing mission
Appendix.

Marinin, Yurii.
ROCKET-MASTODON OR ORBITAL RENDEZVOUS. 7 Feb 63 [5]p. JPRS: 17524.
Order from OTS $0.50 63-21072

Trans. from Bakinskii Rabochii (USSR) [1962] no. 173(12562) 26 July, p. 4.

DESCRIPTORS: *Space flight, Spaceships, Rockets, *Manned spacecraft, *Rendezvous spacecraft, *Lunar craft.

The possibilities of using a single large rocket assembly in a manned lunar flight are compared with the use of a space rendezvous system.

Pujol, Yves and Manson, Numa.
ESTIMATION OF THE DETONATION PRESSURE OF CONDENSED EXPLOSIVES (Estimation de la Pression de Détonation des Explosifs Condensés). [1962] [6]p. (foreign text included) 8 refs.
Order from SLA $1.10 62-20042

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1962, v. 254, p. 3173-3175 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: *Explosive materials, *Detonation waves, *Pressure, Velocity, Gases, Combustion, Mathematical analysis.

Sutre, Gabriel.
WAD FOR A CARTRIDGE, tr. by J. B. 29 June 62, 3p.
Order from OTS or SLA $1.10 62-25679

Trans. of French patent 543, 252, gr. XI, cl. 4, appl. 7 Nov 21, granted 31 May 22, pub. 30 Aug 22.

DESCRIPTORS: *Cartridges, Materials, Production.

Sanitation and Safety Engineering

GREAT MEDICAL ENCYCLOPEDIA, 1962, VOL. 26: SELECTED ARTICLES. 24 Jan 63 [61]p. 29 refs. JPRS: 17276.
Order from OTS or SLA $6.60 63-15385

Trans. of Bol'shaya Meditsinskaya Entsiklopediya (USSR) 1962, v. 26, p. 764-775, 1112-1122, 1195-1203.

DESCRIPTORS: *Parasitic infections, Ecology, *Communicable diseases, *Armed forces, Epidemiology, Countermeasures, *Chemical warfare agents, *Gas masks.

Contents:
Natural focus, by E. Pavlovskii
The antiepidemiological protection of troops, by I. Elkin
The gas mask, by A. Mokeev.

Hinrichsen, K.
ACCIDENTS IN THE IRON AND STEEL INDUSTRY IN THE GERMAN FEDERAL REPUBLIC DURING 1960. Jan 63.
Order from BISI £3 BISI-2858

Trans. of Stahl und Eisen (West Germany) 1961, v. 81 [no. 26] p. 1820-1824.

DESCRIPTORS: *Steel industry, *Accidents, Statistical data, *Safety.

Proshin, P. I.
MEASURES FOR COMBATING ATMOSPHERIC POLLUTION IN MOSCOW (O Merakh Bor'by s Zagryazneniem Atmosfernogo Vozdukha Moskvy). [1962] 6p. [Warren Spring Lab. Trans.] NT532; [DSIR] NLL M. 48°5.
Order from OTS or SLA $1.10 62-25392

Trans. of Gigiena i Sanitariya (USSR) 1951 [v. 16] no. 1, p. 13-16.

DESCRIPTORS: *Atmospheric pollution, Decontamination, Aerosols, *Waste gases, Particles, *Sanitary engineering.

Sellier, Karl.
THE MECHANICAL EFFECT OF DIFFERENT KINDS OF WINDSHIELDS ON THE SKULL IMPACT (Über die Mechanische Wirkung Verschiedener Windschutzscheibenarten beim Stoss auf den Schädel). [1962] [6]p. (foreign text included).
Order from SLA $1.10 62-18896

Trans. of Zentralblatt für Verkehrs-Medizin, Verkehrs-Psychologie und Angrenzende Gebiete (West Germany) 1960 [v. 6] no. 4, p. 198-199.

DESCRIPTORS: *Windshields, *Glass, Laminated glass, *Injuries, *Skull, Impact shock, Safety.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

Kocot, M., Zawadzki, Z., and Hejlasz, Z.
THE INFLUENCE OF SUPERVITAL ADMINISTRATION OF STREPTOMYCIN ON THE PRESERVATION OF MEAT (Wplyw Przyzyciowego Podawania Streptomycyny na Przedluzenie Trwalosci Miesa) tr. by Maria Rojowska. 1962 [12]p. 9 refs. PL-480 Agr.
Order from OTS $0.50 61-11390

Trans. of Medycyna Weterynaryjna (Poland) 1958 [v. 14] no. 5, p. 275-280.

DESCRIPTORS: *Antibiotics, *Streptomycins, Penicillin, *Meat, *Preservation, Storage, Temperature.

A simultaneous administration of penicillin and streptomycin can be of practical usefulness in meat preservation. A period of from 3 to 4 days is sufficient to enable the meat to be distributed among consumers, and further to prepare a dish from it. The meat supplied would at the utmost possess but a trace of the antibiotics used. A flavor test was performed on meat and liver, both being tested in raw, boiled and roasted state. In no case was any deviation from normal observed. Investigation of the behavior of antibiotics in meat, after boiling or roasting, proved them both to be completely inactive. Penicillin and streptomycin administered simultaneously, persisted in meat longer - up to the 8th day, while penicillin administered separately disappeared on the 4th day, and streptomycin on the 3rd day. These results are for meat preservation at room temperature.

Rehm, H[ans]-J[ürgen], Wittmann, H., and Stahl, U.
THE ANTIMICROBIAL SPECTRUM OF COMBINATIONS OF PRESERVATIVES. Pt. 6 of Investigation of the Action of Preservative Combinations. [1962] 23p. 19 refs.
Order from SLA $2.60 62-18846

Trans. of Z[eitschrift für] Lebensm[ittel]-Untersuch-[ung] u[nd] Forsch[ung] (West Germany) 1961, v. 115, no. 3, p. 244-262.

DESCRIPTORS: *Food, *Preservation, Inhibition, Bacteria, Molds, *Absorption spectra, Sorbic acid, *Chemotherapeutic agents.

Metlitskii, L. V.
BIOCHEMICAL ASPECTS OF THE RADIATION METHOD OF FOOD PRESERVATION. 7 Feb 63 [39]p. 30 refs. JPRS: 17530.
Order from OTS $1.00 63-21078

Trans. of Akademiya Nauk SSSR. Izvestiya. [Seriya Biologicheskaya] 1962 [v. 27] no. 6, p. 869-884.

DESCRIPTORS: Ionization, *Radiation effects, Biochemistry, *Food, *Preservation, *Storage, Radiobiology, Taste, Odor, Effectiveness.

Packaging

INNOVATION IN CONTAINER OF HOPS, tr. by F. H. B. 1 Nov 62, 4p. (figs. omitted).
Order from OTS or SLA $1.10 63-13446

Trans. of German patent 44,640, cl. 6, by Marx & Co., pat. from 8 Jan 1888, pub. 18 Sep 1888.

DESCRIPTROS: *Containers, Preservation, *Hops.

Conzelmann, Friedrich.
HOPS PRESERVING CONTAINER, tr. by F. H. B. 1 Nov 62, 2p. (figs. omitted).
Order from OTS or SLA $1.10 63-13439

Trans. of German patent 7890, cl. 81, pat. from 25 Feb 1879, pub. 28 Nov 1879.

DESCRIPTORS: *Containers, Preservation, *Hops.

Meister, Carl.
LONGITUDINAL HINGE FOR CONTAINERS OF HOPS, tr. by F. H. B. 1 Nov 62, 2p. (figs. omitted).
Order from OTS or SLA $1.10 63-13445

Trans. of German patent 38, 332, cl. 6, pat. from 13 May 1886, pub. 7 Feb 1887.

DESCRIPTORS: *Containers, Preservation, *Hops.

Priester, Joseph.
HOPS CONTAINER, tr. by F. H. B. 1 Nov 62, 2p. (figs. omitted).
Order from OTS or SLA $1.10 63-13444

Trans. of German patent 30,909, cl. 6, pat. from 10 Sep 1884, pub. 20 Mar 1885.

DESCRIPTORS: *Containers, Preservation, *Hops.

Schmidt, Conrad.
HOPS PRESERVING CONTAINER WITH ONLY ONE CLOSURE SEAM, tr. by F. H. B. 1 Nov 62, 2p. (figs. omitted).
Order from OTS or SLA $1.10 63-13440

Trans. of German patent 11,210, cl. 6, pat. from 24 Dec 1879, pub. 13 Oct 1880.

DESCRIPTORS: *Containers, Preservation, *Hops.

Schmidt, Conrad.
SEPARABLE HOPS PRESERVING CONTAINER, tr. by F. H. B. 1 Nov 62, 2p. (figs. omitted).
Order from OTS or SLA $1.10 63-13438

Trans. of German patent 7235, cl. 81, pat. from 4 Mar 1879, pub. 26 Nov 1879.

DESCRIPTORS: *Containers, Preservation, *Hops.

Schörg, Franz, Jr.
HOPS PRESERVER WITH BASCULE TYPE AND BAR BOLT ENCLOSURE, tr. by F. H. B. 1 Nov 62, 2p. (figs. omitted).
Order from OTS or SLA $1.10 63-13441

Trans. of German patent 15,540, cl. 6, pat. from 29 Mar 1881, pub. 7 Oct 1881.

DESCRIPTORS: *Containers, Preservation, *Hops.

Schramm, Hermann.
METHOD OF PACKING HOPS, tr. by R. H. B. 1 Nov 62, 2p. (figs. omitted).
Order from OTS or SLA $1.10 63-13443

Trans. of German patent 19,731, cl. 6, pat. from 22 Feb 1882, pub. 23 Oct 1882.

DESCRIPTORS: *Containers, Preservation, *Hops.

Stadler, Georg.
HOPS PRESERVING CONTAINER WITH SIDE COVER, tr. by F. H. B. 1 Nov 62, 1p. (figs. omitted).
Order from OTS or SLA $1.10 63-13442

Trans. of German patent 16,685, cl. 6, pat. from 18 Nov 80, pub. 23 Nov 81.

DESCRIPTORS: *Containers, Preservation, *Hops.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

AUTOMATIC COUNTING AND DISCONNECTING APPARATUS FOR AUTOMATIC LATHES. [1962] 7p. (figs. omitted).
Order from OTS or SLA $1.10 62-18454

Trans. of German patent 420,894, 13 July 24.

DESCRIPTORS: *Lathes, Automatic, Disconnect fittings, Counting methods.

This invention consists of an automatic disconnecting device in conjunction with a counting device in which after a good piece has been turned out the counting mechanism is actuated, and when a defective piece is produced the mechanism is not actuated and the machine is disconnected, while at the same time a signal device is actuated.

Kulbatschny, I. G.
CUTTING PRESSURE AND ENERGY WITH PARALLEL KNIVES. June 59 [9]p. 2 refs. BISI Trans. no. 1292; [DSIR] NLL M.4575.
Order from OTS or SLA $1.10 62-24218

Trans. of German trans. of Russian mono. Mechanical Equipment for Rolling Mills [1946] p. 782-788.

DESCRIPTORS: *Cutting tools, Rolling mills, Industrial equipment.

Kulbatschny, I. G.
ROTARY SHEARS FOR LONGITUDINAL CUTTING. June 59 [13]p. 1 ref. BISI Trans. no. 1293; [DSIR] NLL M. 4572.
Order from OTS or SLA $1.60 62-24215

Trans. of German trans. of Russian mono. Mechanical Equipment for Rolling Mills [1946] p. 803-817.

DESCRIPTORS: *Cutting tools, Rolling mills, Industrial equipment.

Maslii, Konstantin Yakovlevich.
COMPOSITE PLANS FOR RAISING LABOR PRODUCTIVITY. 15 Feb 63 [33]p. JPRS: 17658.
Order from OTS $1.00 63-21140

Trans. of mono. Kompleksnye Plany Povysheniya Proizvoditel'nosti Truda, Moscow, 1961, 30p.

DESCRIPTORS: *Industrial production, *Labor, *Automation, *Machine tools, Cutting tools, Mandrels, Milling machines, Broaches, Hoists, Drilling machines, Design.

This book shows how the author and his comrades have achieved significant results in their work in labor by applying automatic devices, highly productive instruments, efficient cutting methods, and other technological innovations. (Preface)

Osokin, V. P.
ANALYSIS OF THE OPERATION OF PULVERIZER FANS. [1962] [7]p. 4 refs. C. E. Trans. 2376; [DSIR] NLL M. 6289.
Order from OTS or SLA $1.10 62-25938

Trans. of Teploenergetika (USSR) 1960, v. 7, no. 6, p. 47-49.

DESCRIPTORS: *Fuels, Dehydration, Waste gases, *Fans, *Grinders, Design, Operation, Power, Mathematical analysis.

The theoretical analysis of the operation of pulverizer fans is given. Formulae are derived for the determination of the power required by the pulverizer fan. (Author)

Sawin, N. N.
EXPERIENCE IN THE HARD-CHROMIUM PLATING OF CUTTING TOOLS. 18 Nov 47, 8p. (figs. refs. omitted).
Order from SLA $1.10 62-20336

Trans. of Maschinenbau (Germany) 1942, v. 21, no. 1, p. 11-14.

DESCRIPTORS: *Cutting tools, *Chromium plating.

Engines and Propulsion Systems

SIGNIFICANCE OF TURBINES WITH PARALLEL-SEQUENTIAL STEAM FLOW AND SPECIAL METHODS OF THEIR THERMAL CALCULATIONS. [1961] 15p. [DSIR] NLL M 1909.
Order from OTS or SLA $1.60 61-13464

Trans. from Politekhn[icheskii] In[stitu]t, Tallinn. Trudy (Estonian SSR) 1957, ser. A, no. 105.

DESCRIPTORS: *Marine engines, *Steam turbines, Design, Steam, Gas flow, Thermodynamics, Mathematical analysis.

To increase the high efficiency of turbines at decreased speed several methods are used, four of which are examined here: (1) Stages of cruising and economical speed, (2) slip parameters of steam, (3) gas turbine accelerators and (4) Parallel-sequential steam flow.

USSR INDUSTRIAL DEVELOPMENT: SOVIET POWER MACHINERY NO. 7. 3 Jan 63 [40]p. JPRS: 16961.
Order from OTS or SLA $3.60 63-13843

Trans. of Promyshlennaya Energetika (USSR) [1962, v. 17, no. 11] p. 61-62; Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 11, p. 65-69, 86-87; and from Pravda, Moscow (USSR) 1962, 9 Oct, p. 1; 17 Oct, p. 3; Ekonomicheskaya Gazeta (USSR) 1962, no. 41(62) p. 10 and 35.

DESCRIPTORS: *Industrial production, Machines, *Power equipment, *Electric power production, Turbines, *Steam turbines, *Gas turbines, Design, Construction, Marine engines, *Deisel engines, *Generators, *Fans.

Contents:
Progress of the seven year plan (excerpts)
Workers of the Leningrad metal plant imeni XXII S'ezda KPSS make their contribution to the electrification of the nation, by A. Grusdev (excerpts)
Thermotechnics equipment produced by the Chernovitsy machine-building plant
The construction of fixed gas turbines in the RSFSR, by M. F. Sichikov
Automated marine diesel-generators DGA50-9 and DGA25-9, by G. A. Vakulenko
A criminal anomaly, by G. Vasil'ev and G. Rubtsov
Fan building is without a conductor, by N. Pavlov and N. Lane.

Bogatev, K. I.
CALCULATION OF TRANSIENT STABILITY TAKING ACCOUNT OF THE EFFECT OF DAMPER-WINDINGS, SPEED-GOVERNORS AND EXCITATION REGULATORS. [1962] [11]p. 3 refs. C. E. Trans. 2393; [DSIR] NLL M. 6288.
Order from OTS or SLA $1.60 62-25937

Trans. of Elektrichestvo (USSR) 1961, no. 7, p. 31-34.

DESCRIPTORS: *Turbines, *Transients, Stability, Turbine parts, Speed regulators, Excitation, Damping.

The method of successive intervals is widely recognised as the engineering method of calculating transient stability in cases where there is no dynamic model and it is necessary to make the calculation by analytical means. Normally, calculation by this method is simplified, no allowance being made for the effect of damper windings, turbine-governors and excitation-regulators. This paper shows that the effect of these factors can also be taken into account and, as a result, calculation of transient stability by the method of successive intervals will be more accurate. (Author)

Chernev, K. K.
WORKING PROJECT FOR THE TVM-60 TURBOGENERATOR. [1962] [5]p. C. E. Trans. 2523; [DSIR] NLL M 8823.
Order from OTS or SLA $1.10 62-32813

Trans. of Elekt[richeskie] Stantsii (USSR) 1960 [v. 31] no. 6, p. 90-91.

DESCRIPTORS: Electric power production, *Turbines, *Generators, Design, Turbine stators, Turbine wheels, Cooling, Thermal insulation.

Dyban, E. P., Kondak, N. M., and Shvets, I. T.
RESEARCH ON HEAT-EXCHANGE IN COURSE OF CONTACT BETWEEN PARTS. Paper presented at Scientific-Technical Meeting on Gas Turbines of the Academy of Sciences, USSR (no. 6) Apr 54. [1961] 16p. 1 ref. [DSIR LLU] M. 2676.
Order from OTS or SLA $1.60 61-23520

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya [1954] no. 9, p. 62-79.

DESCRIPTORS: Gas turbines, *Gas turbine blades, *Gas turbine disks, Surfaces, *Heat transfer, Sliding contacts, Tests, Turbine parts.

Fedotov, L. M.
CHANGING OVER FROM CENTRIFUGAL TO HYDRODYNAMIC GOVERNING OF TURBINES. [1962] [10]p. C. E. Trans. 2298; [DSIR] NLL M. 6335.
Order from OTS or SLA $1.10 62-25963

Trans. of Elekt[richeskie] Stantsii (USSR) 1961, v. 32, no. 3, p. 16-21.

DESCRIPTORS: *Turbines, *Speed regulators, Centrifugal pumps, *Hydraulic systems, Hydraulic pressure pumps, Design, Operation.

Girshfeld, V. Ya. and Shen-Yun-Din.
RESPONSIVENESS OF A 200 MW UNIT WITH ONCE-THROUGH BOILER. [1962] [9]p. C. E. Trans. 2517; [DSIR] NLL M. 8822.
Order from OTS or SLA $1.10 62-32812

Trans. of Teploenergetika (USSR) 1961, v. 8, no. 10, p. 40-43.

DESCRIPTORS: *Steam turbines, Boilers, Heating, Steam, Pressure, Temperature.

Kolodtsev, Kh. I., Babii, V. I., and Kustovskii, S. P.
GAS-PRODUCER FOR GAS TURBINE INSTALLATIONS [1962] [9]p. C. E. Trans. 2364; [DSIR] NLL M. 6010.
Order from OTS or SLA $1.10 62-25921

Trans. of Teploenergetika (USSR) 1961, v. 8, no. 4, p. 44-48.

DESCRIPTORS: *Gas turbines, Gases, Production, *Gas generating systems, Design, Tests.

Discusses the design of a gas turbine installation operating on solid fuel with preliminary gasification of the solid fuel. Gives a short description of the design and technological features of the high-intensity gas-producer of the All-Union Power Engineering Institute. Reports the results of tests on the pilot commercial gas-producer installation for use with a gas turbine installation, at fuel loads up to 2500 kg/m^2. h and heat loads up to 16 • 10^6 kcal /m^2 . h. (Author)

Korneev, M. I. and Drobot, V. P.
STEAM-GAS-TURBINE PLANT OF 175-200 MW CAPACITY WITH HIGH PRESSURE STEAM GENERATORS. [1962] [12]p. 2 refs. C. E. Trans. 2214; [DSIR] NLL M. 6333.
Order from OTS or SLA $1.60 62-25961

Trans. of Energomashinostroenie (USSR) 1960, v. 6, no. 1, p. 17-21.

DESCRIPTORS: Turbines, *Steam turbines, Gas turbines, Steam, *Gas generating plants, Design, Construction, Economics, Thermodynamics.

A steam and gas turbine plant in a high capacity unit with two high pressure generators is examined. Each generator has an output of 210 t/h with GT-700-12 gas turbines and a PVK-150 steam turbine. The layout of basic equipment and technical and economic characteristics are explained. (Author)

Larin, T. V. and Astashkevich, B. M.
CHROME PLATING FOR LONGER LIFE OF ENGINE PARTS OPERATING UNDER FRICTION. Jan 63, 2000 words.
Order from HB $5.40 HB-5566

Trans. of #Vestnik Mashinostroeniya (USSR) 1962, v. 42, no. 2, p. 37-40.

DESCRIPTORS: *Chrome plating, *Engine structures, Engine cylinders, Bushings, Pistons, Crankshafts, Friction

Lokai, V. I.
DEPENDENCE OF PROFILE LOSSES IN CASCADES ON ANGLE OF ATTACK [Zavisimost' Profil'nykh Poter' v Reshetke ot Ugla Ataki]. [1961] 9p. 4 refs. MDF L-108.
Order from OTS or SLA $0.50 62-11300

Trans. of A[kademiya] N[auk] SSSR. Otd[elenie] T[ekhnicheskikh] Nauk. Izvestiya, 1954, no. 6, p. 47-52.

DESCRIPTORS: Gas turbines, *Gas turbine blades, *Gas flow, *Angle of attack, Configuration, Operation, Experimental data.

Generalized experimental formulas are obtained which characterize the operation of a cascade at various angles of attack. These formulas can be used in theoretical investigations of the various operating regions of turbines, especially when the investigation is based on replacing the annular cascade by a planar. (Author)

Mariev, D. I.
ENERGY POTENTIALITIES OF HIGH TEMPERATURE GAS TURBINE'S. [1962] [7]p. 6 refs. C. E. Trans. 2529; [DSIR] NLL M. 6375.
Order from OTS or SLA $1.10 62-32804

Trans. of Elekt[richeskie] Stantsii (USSR) 1961, v. 32, no. 10, p. 18-22.

DESCRIPTORS: *Gas turbines, Turbines, Energy, Temperature, Cooling, Heat transfer, Power, Electrical properties.

Sergeev, G. A.
A NEW HIGHLY EFFICIENT COMPRESSOR STAGE WITH A 50% DEGREE OF REACTION (Novaya Vyskoeffektivnaya Kompressornaya Stupen' s 50-Protsentnoi Stepen'yu Reaktivnosti). Aug 61 [8]p. TIL/T. 5223; [DSIR] NLL M. 3489.
Order from OTS or SLA $1.10 62-25358

Trans. of Teploenergetika (USSR) 1959 [v. 6] no. 3, p. 32-35.

DESCRIPTORS: *Gas turbines, *Compressors, *Axial-flow compressors, Design, Axial-flow compressor blades, Geometry, Pitch (Motion), Gas flow, Velocity, Pressure.

The axial compressor stage with a 50% degree of reaction (K-50-1) developed at the Central Boiler-Turbine Institute is a highly efficient stage, suitable for operation at peripheral speeds of up to u_N=300 m/sec. At a peripheral speed u_N=280 m/sec the stage has a head coefficient $\psi = 0.496$ and adiabatic efficiency η adiabatic = 0.94 at a coefficient of flow $\psi = 0.46$. On the basis of the K-50-1 stage it is possible to design multistage axial compressors with high efficiency. The use of this stage in multistage compressors with peripheral speeds higher than 240 m/sec will permit a considerable reduction in the number of stages in the compressor and thereby reduce expenses in their construction. (Author)

Slobodyanyuk, L. I. and Spiridonov, V. A.
CLOSED-CYCLE STEAM-GAS-TURBINE PLANT. [1962] [6]p. 6 refs. C. E. Trans. 2370; [DSIR] NLL M. 6322.
Order from OTS or SLA $1.10 62-25954

Trans. of Teploenergetika (USSR) 1961, v. 8, no. 4, p. 25-27.

DESCRIPTORS: Turbines, *Steam turbines, *Gas turbines, *Compressors, Design, Steam condensers, Water vapor, Injectors, Thermodynamics.

A new closed-cycle installation of the gas-turbine type is examined, in which water vapour is used as the working medium. In the installation, there is injection into the steam lines instead of using heavy surface coolers. The excess steam obtained is used in a small condensing turbine for additional generation of energy. The best system of the examined steam-turbine-compressor systems possesses an efficiency of 45-46% which is 7-8% better than the similar system operating on air. The proposed system of the steam-turbine compressor unit whilst possessing all the positive properties of the gas-turbine unit, is more efficient and is more convenient from the design point of view. (Author)

Tikhoplav, V. Yu.
NEW TYPE OF MARINE GAS TURBINE ENGINE AND PRINCIPLES OF ITS USE. [1962] [9]p. 2 refs. [DSIR] NLL M. 6308.
Order from OTS or SLA $1.10 62-25946

Trans. of Sudostroenie (USSR) 1961 [v. 27] no. 11, p. 19-23.

DESCRIPTORS: *Hydrofoil boats, Propulsion, *Marine engines, *Gas turbines, Design, Operation, Afterburners, Marine propellers, Power.

The article considers the necessity of constructing a special engine for ships fitted with hydrofoils and suggests a possible solution of this problem. (Author)

Vlasov, K. P.
ON THE CALCULATION OF THE SIMPLEST RAMJET-TYPE COMBUSTOR. 20 Sep 62 [28]p. 15 refs. AID rept. 62-125.
Order from OTS or SLA $2.60 63-13708

Trans. of mono. Stabilizatsiya Plameni i Razvitie Protsessa Sgoraniya v Turbulentnom Potok: Sbornik Statei (Stabilization of the Flame and the Development of the Combustion Process in a Turbulent Flow: Collection of Articles) Moscow, 1961, p. 128-148.

DESCRIPTORS: Ramjet engines, Combustion chambers, *Combustion, Flames, *Flame propagation, Turbulent flow, Mathematical analysis.

A calculation method for the simplest ramjet-type combustor is presented. The method consists in closing the system of the basic gas-dynamic equations (of fuel-mixture flow) within a cylindrical tube with a point-ignition source, by introducing an auxiliary condition which defines the dependence of the width of the combustion zone on the distance to the ignition source. The results of the calculation were compared with some experimental data and were found to be in good agreement with them. (Author)

Zenkevich, Yu. V. and Ariel', S. Ya.
THERMAL AND CHEMICAL TESTS ON A ONCE-THROUGH BOILER AND HIGH-PRESSURE TURBINE. [1962] [8]p. C. E. Trans. 2348; [DSIR] NLL M. 6172.
Order from OTS or SLA $1.10 62-25935

Trans. of Teploenergetika (USSR) 1961, v. 8, no. 4, p. 12-15.

DESCRIPTORS; *Turbines, *Boilers, *Feed water, Salts, Chemical analysis, Thermodynamics.

The results of thermal and chemical tests on a 67-SP boiler and a VK-100-2 turbine are described, and data are given on the feed water conditions and the deposits in the boiler-turbine system. (Author)

Machine Parts and Mechanisms

Amel'yanchik, A. V.
CALCULATING THE STRENGTH OF TURBINE DISCS BY COMPUTOR. [1962] [9]p. 4 refs. C. E. Trans. 2263; [DSIR] NLL M. 4918.
Order from OTS or SLA $1.10 62-25872

Trans. of Akad[emiya] Nauk SSSR. [Otdelenie Tekhnicheskikh Nauk]. Izv[estiya]: Mekh[anika] i Mash[inostroenie] 1959, no. 1, p. 138-143. Another trans. is available from ATS $11.50 as ATS-76L35R [1959] 9p.

DESCRIPTORS: Turbine parts, *Turbine rotors, Gas turbine disks, Tensile properties, Deformation, Creep, Determination, *Digital computers.

A method is described, and a universal programme is given, for the calculation, on the "Strela" (Arrow") electronic computor, of the stresses and displacements arising in non-uniformly heated disks of arbitrary profile. The solution of the elastic problem is reduced to a system of equilibrium equations for the displacement, while the plastic problems (on the basis of the theory of small elastic-plastic deformations) and the creep problem (on the basis of the theory of ageing) are solved by the iteration of a series of elastic problems with variable elasticity parameters. The steady and regular convergence of the successive approximations made it possible to carry out calculations for disks at high elongations of e=20% or more. The relation between the characteristics of the disk material and the temperature is taken into account, and the calculations can cover a disk made of two different metals. The length of time taken to solve each plastic equation on the "Strela" computor, assuming a relative deformation of 20% in the disc, is about 10 minutes. The calculations were carried out on a "Strela III" electronic computor at the calculating centre of the Academy of Sciences of the USSR. (Author)

Lefarov, A. Kh.
NEW, LOCKING DIFFERENTIALS, tr. by A. J. Greening. [1962] [17]p. 2 refs. MIRA Trans. no. 7/62; [DSIR NLL] M. 3565.
Order from OTS or SLA $1.60 63-15651

Trans. of Avtom[obil'naya] Prom[yshlennost'] (USSR) 1960, no. 12, p. 4-7.

DESCRIPTORS: Differentials, *Differentials (Mechanical), Operation, Tests, Vehicle chassis components.

Ovrutskaya, N. B. and Kheifets, M. Z.
THE AXIAL STABILITY OF TURBINE ROTORS FITTED WITH A THRUST BALANCING DEVICE. [1962] [8]p. C. E. Trans. 2213; [DSIR] NLL M. 4957.
Order from OTS or SLA $1.10 62-25890

Trans. of Leningr[adskii] Metallich[eskii] Zav[od]. Trudy (USSR) 1957, v. 5, p. 345-350.

DESCRIPTORS: *Rotary pumps, *Steam turbines, *Turbine wheels, Stability, Thrust, Feedback.

Vaganov, R. D., Dimentberg, F. M., and Serensen, S. V.
THE DYNAMIC STRENGTH OF THE ROTORS OF TURBOGENERATORS. [1962] [47]p. 26 refs. C. E. Trans. 2313; [DSIR] NLL M. 6334.
Order from OTS or SLA $4.60 62-25962

Trans. of Akademiya Nauk SSSR. [Otdelenie] Tekhnicheskikh Nauk. Izvestiya, 1955, no. 9, p. 65-106.

DESCRIPTORS: Turbines, Generators, Turbine parts, *Turbine wheels, Dynamics, Statics, Oscillation, Stresses, Loading (Mechanics).

The dynamic strength of the rotor of a turbogenerator is determined by the level of the oscillatory and static stress in the most heavily loaded regions of stress concentrations and by its load-carrying capacity which is specified by its resistance to destruction through fatigue in these regions. The investigation of the critical states of rotating rotors has shown that the values of the critical velocities vary in relation to the dynamic strength of the support and that the oscillatory interaction of rotor and the supports increases the amplitude of the variable stresses. A study of the stationary and non-stationary problems of the oscillations of a rotor on elastic supports showed that the variable stresses increase as the critical velocities are passed. To the variable stresses due to the influence of the weight of the rotor, particularly in the region of the first critical velocity, are added variable stresses resulting from the oscillations of the supports and varying with twice the velocity. In non-stationary passage through the critical states there occurs a static bending of the rotor which varies slowly with the time, to which variable stresses due to the oscillations of the supports are added. (Author)

Manufacturing Equipment and Processes

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 28. 7 Jan 63 [35]p.
JPRS: 17014.
Order from OTS or SLA $3.60 63-13851

Trans. of Partiinaya Zhizn' (USSR) 1962, no. 21, p. 8-15; no. 22, p. 8-15; Partiinaya Zhizn' Kazakhstana (USSR) 1962 [v. 32] no. 9, p. 3-9; and from Pravda, Moscow (USSR) 1962, 17 Oct.

DESCRIPTORS: *Industrial production, Industry, *Management engineering, Construction, Automation, *Economics.

Contents:
Party responsibility for industry's future
Capital construction is the main task (selected portions)
Greatest results for smallest outlays, by V. Babushkin
Year of automation, by D. E. Glagolev.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 31. 22 Jan 63 [18]p.
JPRS: 17241.
Order from OTS or SLA $1.60 63-15404

Trans. of Promyshlennost' Armenii (USSR) 1962 [v. 5] no. 10, p. 13-15 and 63-64; and from Sel'skaya Zhizn' (USSR) 1962, 25 Dec, p. 1; Pravda, Moscow (USSR) 1962, 21 Nov, p. 3-4.

DESCRIPTORS: *Industrial production, *Industrial equipment, Machine tools, *Economics.

Contents:
Industrial development of Lithuania, Latvia and Estoni
Comrade A. I. Kostousov's speech
Armenian industrial development
In the Council of National Economy, Armenian SSR.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 32. 12 Feb 63 [48]p.
JPRS: 17571.
Order from OTS $1.25 63-21092

Trans. of Mekhanizatsiya i Avtomatizatsiya Proizvodstva (USSR) 1962 [v. 16] no. 11, p. 3-26.

DESCRIPTORS: Industry, *Industrial production, Economics, *Automation, *Industrial equipment, Labor, Management engineering.

Contents:
Problems in developing experimental model enterprises, by P. D. Borodin
Mechanization and automation of production in the Leningrad administrative region, by A. K. Antonov
For the technical progress, by V. I. Degtyarev
Mechanization and automation at the Gor'kovskii Sovnarkhoz enterprises, by T. I. Lapin
Development of the mechanization and automation in the Minskaya oblast, by V. F. Yazykovich.

USSR INDUSTRIAL DEVELOPMENT: SOVIET REGIONAL ECONOMY NO. 34. 26 Feb 63 [13]p.
JPRS: 17804.
Order from OTS $0.50 63-21195

Trans. from Rabochaya Gazeta (USSR) 1963, 11 Jan; Sovetskaya Belorussiya (USSR) 1962, 20 Oct; Stroitel'naya Gazeta (USSR) 1963, 13 Jan, p. 1; Ekonomicheskaya Gazeta (USSR) 1962, no. 52(73); Pravda, Moscow (USSR) 1962, 17 Dec, p. 2.

DESCRIPTORS: *Industry, *Industrial production, Management engineering, Machines, Machine tools, Construction, Quality control.

Contents:
Planning, production organization and supply problems, by V. Slobodenyuk
Belorussian machine building in 1962
Growing industry of the Central Urals
Belorussian industrial growth, by S. N. Malinin
The quality of machines, by D. Biryukov.

Heratsch, G.
HIGH LOADING LAYER RESISTANCE AND PROCESS FOR ITS PRODUCTION. 1962.
Order from TTIS $5.40 TTIS NS 66

Trans. of East German patent 23,987, appl. 10 Feb 59, pub. 12 Oct 62.

DESCRIPTORS: *Loading (Mechanics), Resistance, Production.

Kirienkov, V. I., Kurdyukov, A. S., and Golovanov, A. I.
THE LARGE-SCALE LABORATORY MODEL APPARATUS OF THE INSTITUTE OF FUEL FOR THE CONTINUOUS COKING OF COAL. [1962] [8]p. 2 refs.
NCB Trans. A.1960/SEH; [DSIR] NLL M. 3360.
Order from OTS or SLA $1.10 62-24824

Trans. of [Akademiya Nauk SSSR]. Inst[itut] Goryuchikh Iskopaemykh. Trudy, 1959, v. 10, p. 45-50.

DESCRIPTORS: *Coal, *Coke, Production, Presses (Machinery), Electric furnaces, Ovens.

A large-scale continuous coking apparatus was designed, consisting of a continuously operating coal moulding unit and a set of tubular electric furnaces for caking and baking briquettes. The apparatus was equipped with a ventilation system and a control panel. The capacity of the apparatus is 60 kg/hour. (Author)

Rüb, F.
AUTOMATIC TEMPERATURE CONTROL IN INDUSTRIAL FURNACES. [1962] 3p. (figs. refs. omitted).
Order from SLA $1.10 62-18247

Trans. of Werkstatt und Betrieb (West Germany) 1955, v. 88, no. 4, p. 163-164.

DESCRIPTORS: *Temperature control, Automatic, *Furnaces, Industrial plants, *Control systems.

Shturman, A. A.
NEW METHODS FOR THE LINING OF METAL PIPES WITH PLASTIC. 5 Feb 63 [6]p. JPRS: 17468.
Order from OTS $0.50 63-21050

Trans. of Mashinostroenie (USSR) 1962, no. 3, p. 79-81.

DESCRIPTORS: *Pipes, Metal-plastic adhesives, *Vinyl plastics, Manufacturing methods, *Cavity liners. *Plastic coatings. Coatings.

Transport, Traction and Hoist Facilities

USSR INDUSTRIAL DEVELOPMENT: SOVIET AUTOMOTIVE INDUSTRY NO. 26. 21 Jan 63 [12]p.
JPRS: 17205.
Order from OTS or SLA $1.60 63-15395

Trans. of Avtomobil'nyi Transport (USSR) 1962 [v. 40] no. 10, p. 58; and from Avtomobil'naya Promyshlennost' (USSR) 1962 [v. 28] no. 8; Pravda, Moscow (USSR) 1962, 9 Sep, p. 3.

DESCRIPTORS: *Industrial production, *Automotive industry, Cargo trucks, Vehicle chassis components, Standardization, Vehicles, Trailers, Transportation.

USSR INDUSTRIAL DEVELOPMENT: SOVIET AUTOMOTIVE INDUSTRY NO. 27. 15 Feb 63 [17]p.
JPRS: 17665.
Order from OTS $0.50 63-21142

Trans. of Nauchno-Tekhnicheskie Obshchestva SSSR, 1962 [v. 4] no. 11, p. 18-19; and from Izvestiya (USSR) 1962, 29 Sep, p. 4; Vechernaya Moskva (USSR) 1962, 19 Dec, p. 1; 24 Dec, p. 2; Avtomobil'naya Promyshlennost' (USSR) 1962 [v. 28] no. 11 (1 article).

DESCRIPTORS: *Industrial production, *Automotive industry, Vehicles, *Passenger vehicles, *Hoists, *Cargo vehicles, *Maintenance vehicles, Design, Production.

Contents:
A new bus, truck crane, and economy car, by V. Krivosheev and V. Polenin
The ZIU-7 trolley bus is being tested, by N. Rubinskii
High-speed street sweepers
New ZIL-133 "S" dump truck, by N. Ushatikov
Further development of motor vehicle industry.

Osipov, S. I.
THE USE OF REGENERATIVE BRAKING IN A WIDE SPEED RANGE (Ispol'zovanie Rekuperativnogo Tormozheniya v Shirokom Diapazone Skorostei). 6 July 61 [12]p. (foreign text included). Trafford Park no. 2985; [DSIR] NLL M. 3424.
Order from OTS or SLA $1.60 62-24836

Trans. of Elekt[richeskaya i] Teplovoz[naya] Tyaga (USSR) 1960, no. 12, p. 35-37.

DESCRIPTORS: *Railroads, Safety devices, *Locomotives, *Brakes, *Electric brakes, Power supplies, Circuits.

Improvements in braking methods are discussed which will improve the safe running of trains.

MATERIALS

Depke, F. M.
COMBINATIONS OF BITUMINOUS RAW MATERIALS WITH PLASTICS. [Feb 63] 8p.
Order from ATS $12.75 ATS-60P65G

Trans. of Erdöl [und] Kohle[-Erdgas-Petrochemie] (West Germany) 1962, v. 15, no. 6, p. 535-538.

DESCRIPTORS: *Bitumens, *Plastics, Mixtures.

Gvozdev, A. A., Mikhailov, K. V., and Nikula, I.
GLASS-REINFORCED PLASTICS FOR REINFORCING CONCRETE STRUCTURES. [1961] [17]p. (8 figs. omitted). AERDL T-1008; RIS E 682.
Order from OTS or SLA $1.60 62-13278

Trans. of Beton i Zhelezobeton (USSR) 1960, no. 3, p. 105-111.
Also available from RIS $30.00 as RIS E-682; another trans. is available from OTS or SLA $1.60 as 62-24611 LC-1021, Dec 60 [12]p.

DESCRIPTORS: *Reinforced concrete, *Reinforcing materials, *Glass textiles, Plastics, Bonding, Reinforcing steel, Laminates, Construction materials industry.

For abstract see Technical Translations 8: 686, 1962.

Malkin, V. I. and Mogutnov, B. M.
MEASUREMENT OF DIFFUSION COEFFICIENTS FOR SILICATE MELTS WITH Na-24, K-42, AND Ca-45 (Izmerenie Koeffitsientsov Samodiffuzii Kationov v Silikatnykh Rasplavakh s Pomoshch'yu Radioaktivnykh Izotopov Na-24, K-42, i Ca-45). [1962] [11]p. 10 refs.
Order from OTS or SLA $1.60 AEC-tr-5191

Trans. of mono. Conference on Radioisotopes in the Physical Sciences and Industry, Copenhagen, 6-17 Sep 60. Proceedings, v. 1 [Vienna] 1962, p. 169-178 (STI/PUB/20).

DESCRIPTORS: *Metallurgy, *Geochemistry, *Glass, *Silicates, Melting, *Tracer studies, Radioactive isotopes, Sodium, Potassium, Calcium, Diffusion.

The self-diffusion coefficients of the ions Na^+, K^+, and Ca^{++} were measured in the melts $Na_2O \cdot 2SiO_2$, $Na_2O \cdot K_2O \cdot 4SiO_2$, $Na_2O \cdot Li_2O \cdot 4SiO_2$ and $Na_2O \cdot CaO \cdot 4SiO_2$ by means of the radioisotopes Na^{24}, K^{42}, and Ca^{45}. The self-diffusion coefficient of the Na^+ ion in these melts decreases in the order $Na_2O \cdot 2SiO_2$; $Na_2O \cdot Li_2O \cdot 4SiO_2$; $Na_2O \cdot K_2O \cdot 4SiO_2$; and $Na_2O \cdot CaO \cdot 4SiO_2$. Measurement of the self-diffusion coefficients of the K^+ and Ca^{++} ions in the melts $Na_2O \cdot K_2O \cdot 4SiO_2$ and $Na_2O \cdot CaO \cdot 4SiO_2$ showed that the ratio of the cation self-diffusion coefficients in these melts corresponds to that of their transport numbers. The results show that when the two cations are combined in various ways in the silicate melts, their mobility can be determined from the degree of structure condensation and also from the joint polarization of the anions by the two cations. (Author)

Meiklyar, P. V.
THE LIMITING SLOPE OF THE ISOOPAQUE OF A PHOTOGRAPHIC LAYER. [1962] 5p.
Order from ATS $8.00 ATS-41P66R

Trans. of [Vsesoyuznyi] Nauchn[o-] Issled[ovatel'-skii] Kinofotoinst[itut]. Tr[udy] (USSR) 1960, no. 37, p. 45-49.

DESCRIPTORS: Photography, Photographic equipment.

Voyutskii, S. S., Gul', V. E. and others.
ADHESION OF VARIOUS ELASTOMERS. Pt. 1 of Adhesion of Polymers to Silicate Glass. [1962] [10]p. 27 refs.
Order from OTS or SLA $1.10 62-20432

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1962, v. 4, no. 2, p. 285-293.

DESCRIPTORS: *Elastomers, *Adhesion, Polymers, Silicates, Glass.

For cases where interpenetration of adhesive and substrate molecules is without a doubt, it was shown that adhesion of elastomers to silicate glass depends on time and contact temperature in the same way as adhesion of elastomer to the polymeric substrate. It was determined that all the factors, which are favorable to diffusion increase, are also favorable to the elastomer adhesion to the glass. The experimental data show, that during the formation of adhesive bond between elastomer and glass, an important role is played by diffusion of macro-molecular ends or the penetration of polymer into the micro-cracks on the glass surface. (Author)

Wintergerst, S.
AUTOMATIC RECORDING OF CREEP CURVES OF MATERIALS WITH VERY LOW ELONGATION. Jan 63.
Order from BISI £3 15s BISI-2838

Trans. of Materialprüfung (West Germany) 1962, v. 4 [no. 2] p. 43-52.

DESCRIPTORS: Materials, *Creep, *Recording devices, Mirrors, Photoelectric cells.

Ceramics and Refractories

Barthelt, Hans and Lutsch, Adolf.
NON-DESTRUCTIVE TESTING OF CERAMIC INSULATORS WITH ULTRASONICS. July 62, 14p. (figs. omitted) 9 refs.
Order from SLA $1.60 62-18873

Trans. of reprint of Siemens Zeitschrift (West Germany 1952, v. 26, no. 3, p. 3-10.

DESCRIPTORS: *Ceramic materials, Insulating materials, Electric insulation, *Ultrasonics, *Nondestructive testing.

Bezborodov, M. A. and Rzhevuskaya, T. L.
LITHIUM-LEAD-SILICA GLASSES. 31 Aug 60, 5p. (figs. omitted) 10 refs.
Order from OTS or SLA $1.10 62-18882

Trans. of Akad[emiya] N[avuk] BSSR. Doklady, 1959, v. 3, no. 12 [p. 488-491].

DESCRIPTORS: *Glass, Dioxides, *Silicon compounds, *Lead compounds, Lithium compounds.

Borisov, A. F. and Dertev, N. K.
ELECTROCHEMICAL METHOD OF INVESTIGATING THE BOILING PROCESS OF GLASS (Elektrokhimicheskii Metod Issledovaniya Protsessa Varki Stekla). [1962] [9]p. (foreign text included) 8 refs.
Order from OTS or SLA $1.10 62-18900

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Khimiya i Khimicheskaya Tekhnologiya (USSR) 1959, v. 2, no. 3, p. 420-423.

DESCRIPTORS: *Glass, Melting, Electrochemistry, Additives, Viscosity.

Brichard, E.
INFLUENCE OF THE CHARGING METHOD ON THE MELTING RATE IN TANK FURNACES. [Feb 63] 6p.
Order from ATS $9.00 ATS-61P64F

Trans. of Silicates Ind[ustriels] (Belgium) 1954, v. 19, no. 5, p. 207-209.

DESCRIPTORS: *Silicates, Melting, *Furnaces.

Budnikov, P. P. and Zvyagil'skii, A. A.
ON THE PROBLEM OF SINTERING BERYLLIUM OXIDE (K Voprosu Spekaniya Okisi Berilliya) tr. by Sergey Shewchuck. Aug 62 [22]p. (foreign text included) 8 refs.
Order from OTS or SLA $1.60 UCRL Trans-863 (L)

Trans. of Ogneupory (USSR) 1961, v. 26, p. 525-530.

DESCRIPTORS: *Heat-resistant materials, *Refractory materials, *Beryllium compounds, Oxides, Sintering, Crystallization, Plasticizers, High temperature research.

The main factors which affect the sintering of beryllium oxide articles are as follows: Preliminary firing of the beryllium hydroxide at 1350° to 1500° and obtaining BeO with maximum specific weight. Preliminary grinding of the fired BeO to an average dimension of the grains to less than 2-3 mk, which are high in structure defects. The use of 20% to 30% of material in the hydrate or weakly-fired form. The use of plasticizers which assure homogeneity of the mass; high specific pressure of pressing; and maintenance of terminal temperatures of firing. With increase of firing temperature of the beryllium oxide there takes place the process of internal reorganization of the substance: Change of the physical-chemical properties, shape and dimensions of the crystals, of their total surface, contraction and strengthening of the material; that is, in the physical-chemical sense there takes place the process of sintering: a process of recrystallization. (Author)

Krahl, K. and Palatsky, A.
PROCESS FOR THE PRODUCTION OF ARTICLES OF CERAMIC MATERIALS USING AN ALUMINIUM-ALKALI-SILICATE FRIT. 1962.
Order from TTIS $6.30 TTIS NS 68

Trans. of East German patent 23,685, appl. 28 Sep 57, pub. 7 Sep 62.

DESCRIPTORS: *Ceramic materials, *Aluminum compounds, *Alkali metal compounds, Silicates.

Perelotov, I. I.
A METHOD FOR THE SIMULTANEOUS DETERMINATION OF THE RELATIONSHIP BETWEEN a, λ AND c OF THERMAL INSULATION MATERIALS AND THE TEMPERATURE, tr. by Lionel Mote. [1962] [12]p. 2 refs. TRC Trans. no. 1068; [DSIR] NLL M.6361.
Order from OTS or SLA $1.60 62-25697

Trans. of Teploenergetika (USSR) 1960, v. 7, no. 2, p. 77-80.

DESCRIPTORS: *Thermal insulation, *Refractory materials, *Aluminum compounds, Oxides *Thermodynamics, Thermal diffusion, Thermal conductivity, Specific heat, Temperature.

A relative method is considered for the simultaneous determination of a, λ and c of thermal insulation materials. The theory of the method is given and relationships are derived for a, λ and c, with temperature, for Al_2O_3 powder. (Author)

Piscator.
WHAT IS THE STATUS OF COMPOUND GLASS TODAY? (Wo Steht das Verbundglas Heute?). [1962] [6]p. (foreign text included).
Order from SLA $1.10 62-18826

Trans. of Motor-Rundschau (West Germany) 1962, v. 32, no. 16, p. 695.

DESCRIPTORS: *Glass, Foils, Windshields, Automotive industry, Safety.

Scheler, I. and Schumacher, G.
PROCESS FOR IMPROVING THE PROPERTIES OF MIXED CERAMIC MATERIALS. 1962.
Order from TTIS $2.30 TTIS NS 67

Trans. of East German patent 23, 595, appl. 15 May 59, pub. 24 Aug 62.

DESCRIPTORS: *Ceramic materials, Physical properties, Mixtures.

Rybnikov, V. A.
PROPERTIES OF UNFIRED CHROME-MAGNESITE AND MAGNESITE-CHROME BRICKS. May 59 [9]p. 4 refs. BISI Trans. no. 1267; [DSIR] NLL M. 4576.
Order from OTS or SLA $1.10 62-24219

Trans. of Ogneupory (USSR) 1958 [v. 23] no. 7, p. 303-307.

DESCRIPTORS: *Brick, *Magnesite, *Chromite, Refractory materials.

Fuels, Lubricants, and Hydraulic Fluids

Bogdanov, N. F.
MECHANISM OF DEASPHALTING PETROLEUM RESIDUA WITH LIQUID PROPANE: A CRITIQUE OF THE COAGULATION THEORY (O Mekhanizme Deasfaltizatsii Ostatochnykh Neftyankh Produktov Zhidkim Propanom: Kritika Teorii Koagulyatsii). [1962] 12p. [Warren Spring Lab. Trans.] NT 573; [DSIR] NLL M. 4977.
Order from OTS or SLA $1.60 62-25901

Trans. of Neft[yanoe] Khoz[yaistvo] (USSR) 1955, v. 33, no. 5, p. 63-69.
Another trans. is available from Technical and Commercial Trans., 2135 Spruce St., Phila., 3, Pa.

DESCRIPTORS: *Petroleum, Oils, *Asphalt, Tar, Separation, *Propanes, Colloids, Coagulation, Theory.

The widely accepted mechanism for deasphalting residua with propane assumes the formation of colloidally dispersed lyophobic asphalt and tar, and postulates that asphalt begins to coagulate upon the addition of propane to oil. The theory breaks down when the extent of deasphalting is considered, since the amount of asphalt precipitated reaches a maximum at a definite dilution. The theory also fails to explain the precipitation of a considerable amount of propane-soluble oil with the asphalt. Moreover, according to the theory, low molecular oils present in the residuum should facilitate deasphalting, which is contrary to actual experience. (Author)

Goroshko, V. D. and Nikanorova, L. P.
THE USE OF RADIOACTIVE RADIATION FOR CONTROLLING THE ASH CONTENT OF COAL. [1962] [8]p. 4 refs. C. E. Trans. 2367; [DSIR] NLL M 8850.
Order from OTS or SLA $1.10 62-32820

Trans. of Akad[emiya] Nauk SSSR. Otd[elenie Tekhnicheskikh Nauk]. Izvest[iya]: Met[allurgiya [i] Topl[ivo] 1961, no. 1, p. 152-157.

DESCRIPTORS: *Coal, Impurities, Minerals, Ash, Control, *Radiography, Tracer studies.

Leifman, M. I.
RESULTS IN THE DETERMINATION OF DEW POINTS. [1962] [7]p. 1 ref. C. E. Trans. 2074; [DSIR] NLL M. 6011.
Order from OTS or SLA $1.10 62-25922

Trans. of Teploenergetika (USSR) 1960, v. 7, no. 8, p. 29-32.

DESCRIPTORS: *Fuels, *Waste gases, *Dew point, Temperature, Determination, *Measuring devices (Electrical and electronic)

An apparatus, method and some results in the measurement of dew points for certain fuels are described. (Author)

Martiny, K.
COMPARISON OF WET AND DRY COAL PREPARATION PROCESSES WITH REFERENCE TO THE PREPARATION OF HUNGARIAN COALS AND THE DEVELOPMENT OF THE DRY PROCESS INHUNGARY 16 May 58 [24]p. 3 refs.
Order from SLA $2.60 61-16224

Trans. of Pub. Hung. Res. Inst. Mining [sic] 1957, no. 1, p. 3-16.

DESCRIPTORS: *Coal, Preparation, Impurities, Purification, Moisture, Density, Vibration.

After a preliminary historical survey of the development of wet and dry processes for coal preparation, the author discusses the motifs and theoretical considerations which led to the development of the dry process known as the M-process. Its operational principles and practical applications are then discussed, with respect to various practical factors. The theoretical treatment is supported by the results of experimental tests and the operation of large-scale plants. Finally, the future of both wet and dry processes in relation to Hungarian coal-preparation needs is discussed. (Author)

Ramaiya, K. S.
THE INFLUENCE OF ADDITIVES ON THE TEMPERATURE CO-EFFICIENT OF VISCOSITY OF LUBRICATING OILS AT LOW TEMPERATURES. [1952] [16]p. Fuel Research Station NT 297; [DSIR] NLL M. 4839.
Order from OTS or SLA $1.60 62-24815

Trans. of mono. [Soveshchanie po Vyazkosti Zhidkostei i Kolloidnykh Rastvorov (Conference on Viscosity of Liquids and Colloidal Solutions) 12-13 May 41. Trudy] v. 2 [Moscow/Leningrad, 1944] p. 178.

DESCRIPTORS: *Lubrication, *Oils, *Lubricant additives, Viscosity, Low temperature research.

Schnurmann, R.
THE BEHAVIOR OF LUBRICANTS AT HIGH RATES OF SHEAR. [Feb 63] 9p.
Order from ATS $13.65 ATS-40P65G

Trans. of Erdöl [und] Kohle[-Erdgas-Petrochemie] (West Germany) 1962, v. 15, no. 6, p. 451-455.

DESCRIPTORS: *Lubricants, Behavior, Shear stresses.

Shidlovskii, A. A., Semishin, V. I., and Shmagin, L. F.
THERMAL DECOMPOSITION AND COMBUSTION OF HYDRAZINE PERCHLORATE. [1962] [6]p. 18 refs.
Order from OTS or SLA $1.10 62-18705

Trans. of #Zhur[nal Priklad[noi] Khim[ii] (USSR) 1962, v. 35, no. 4, p. 756-759.
An abstract trans. is available from OTS or SLA $1.10 as 62-32113, AID-62-90, 27 June 62, 2p.

DESCRIPTORS: *Propellants, *Hydrazines, Perchlorates, Pyrolysis, Combustion, Catalysis, Stability, Sensitivity, Ammonium compounds.

A study of physico-chemical properties of hydrazine perchlorate, density, melting point, heat of solution, sensitivity to thermal and mechanical agitation, shows it to be considerably more sensitive and less thermally stable than ammonium perchlorate. The burning velocity of hydrazine perchlorate is 2 to 3 times higher, under comparable conditions of temperature and pressure, than that of ammonium perchlorate. (Author)

Vinogradov, G. V. and others.
ASPECTS OF THE COMBINED ACTION OF AIR (MOLECULAR OXYGEN) AND OF ORGANIC SULPHUR PHOSPHORUS AND CHLORINE COMPOUNDS AS ADDITIVES TO PERTOLEUM OILS OF DIFFERENT VISCOSITIES, tr. by Lionel Mote. [1962] [24]p. 24 refs.
TRC Trans. no. 1069; [DSIR] NLL M. 8854.
Order from OTS or SLA $2.60 62-32800

Trans. of Neftekhimiya (USSR) 1961 [v. 1] no. 3, p. 433-443.

DESCRIPTORS: *Petroleum, *Lubricants, *Oils, *Additives, Air, Oxygen, Organic compounds, *Sulfur compounds, Phosphorous compounds, Chlorine compounds, Friction, Reduction.

Molecular oxygen shows the strongest action in preventing welding. In the presence of organic thio, chloro, and phosphorus compounds, it causes a reduction in the coefficients of friction under conditions of seizure, and a reduction in the period during which this process continues. Molecular oxygen is an active, natural additive for the prevention of seizure of steel, and its action must be taken into account, even in those cases when the oils contain synthetic additives to prevent the welding or seizure of steel or to alleviate such processes. The occurrence and progress of seizure must be affected by the conditions of concentration and supply of oxygen to the friction surfaces, and these depend in particular on the viscosity of the lubricant medium. Intensification of the oxidation processes under boundary friction conditions in the absence of seizure, adversely affects the anti-friction properties of petroleum oils. In the presence of such highly active additives as tri-(trichloroethyl)-phosphite, petroleum oils may be effective lubricants under heavy conditions of boundary friction even when the oxygen (oxidation agent) content is very low. (Author)

Zamoluev, V. K.
THERMAL PROPERTIES OF COALS UNDERGOING PYROLYSIS. [1962] [7]p. 6 refs. NCB Trans. A. 1963/SEH; [DSIR] NLL M. 3449.
Order from OTS or SLA $1.10 62-24850

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1959 v. 4 [no. 7] p. 20-23.
Another trans. is available in German from T. I. B. $1.55, 10p.

DESCRIPTORS: *Coal, Pyrolysis, Physical properties, Specific heat, Thermal diffusion, Thermal conductivity.

Results are given of an investigation of the specific heat, thermal diffusivity and thermal conductivity of Donets K, PS and T coals during isothermal decomposition. The investigation was carried out on the vitrainized part of the coal, obtained by the dense-medium method of separation. (Author)

Leather and Textiles

Beyersdorf, P.
SPINNABLE GLASS. 1962.
Order from TTIS $2.30 TTIS NS 64

Trans. of East German patent 23, 467, appl. 17 May 58, pub. 24 July 62.
Another trans. is available from TTIS $2.50 as TTIS-NS-52, Oct 62, 300 words.

DESCRIPTORS: Glass, *Glass textiles.

Lee, Shoki, Kawakami, Hiroshi, and Hitomi, Kiyoshi.
PROGRESS OF STUDY OF "SYNTHETIC NO. 1" (GOSEI NO. 1). [1962] [31]p.
Order from SLA $3.60 62-18943

Trans. of [Kyoto Daigaku Nippon] Kagaku Sen-i [Kenkyusho] Koenshu (Japan) 1940, v. 5, p. 115-138.

DESCRIPTORS: *Polyvinyl alcohol, *Fibers (Synthetic), Heat treatment, *Textiles, Processing, Synthetic fibers.

Scharroba, W.
SEPARATE DELUSTERING OF TEXTILES, ESPECIALLY THOSE MADE FROM COMPLETELY SYNTHETIC FIBERS. [1962] 8p.
Order from ATS $11.25 ATS-31P63G

Trans. of Spinner [und] Weber Textilveredl[ung] (West Germany) 1961, v. 79, no. 10, p. 944-948.

DESCRIPTORS: Textiles, *Synthetic fibers, Manufacturing methods

Szucht, Edward.
TENSILE TEST DIAGRAMS FOR WOOL FIBERS AND THEIR MECHANICAL PROPERTIES (Wykresy Rozciagania Wlokien Welnianych i Ich Charakterystyka Mechaniczna) tr. by Bengt Scotland. 1962 [16]p. 5 refs. PL-480 Agr.
Order from OTS or SLA $0.50 60-21577

Trans. of Instytut Wlokiennictwa, Lodz. Prace (Poland) 1959, v. 9, no. 2, p. 39-58.

DESCRIPTORS: Tensile properties, Fibers, Woolen textiles, Mathematical analysis, *Elasticity.

An attempt was made to classify the elasticity of fibers from various wools and of various morphological structures on the basis of the determined values of initi work modulus. Merino wools display the highest proper ties of elasticity. High values are also given by unmedullated fibers from Cheviot, Welsh, Mongolian and Sinning wools. Exceptionally low values are represente by both Australian and New Zealand Crossbred wools. Kemp fibers display very considerable deformation, up to yield point, despite low initial work modulus. The figures given do not indicate any correlation between indices of elasticity and fiber strength or extension. Coarse fibers give lower values of yield point stress and strain. Analysis of rupturing time for various fibers shows that it fluctuates widely, dependent on fiber grade and fineness. In order to retain a 20-second rupturing time for the fibers of various wools, the application of different extension speeds is necessary.

Zhurkov, S. N. and Abasov, S. A.
THE ROLE OF CHEMICAL AND INTERMOLECULAR BONDS IN POLYMER RUPTURE (Rol'khimicheskikh i Mezmolekulyarnykh Svyazei pri Razryve Polimerov). Nov 61 [7]p. 1 ref. TIL/T.5260; [DSIR] NLL M.3531.
Order from OTS or SLA $1.10 62-25363

Trans. of Vysokomol[ekulyarnye] Soedineniya (USSR) 1961, v. 3, no. 3, p. 450-455.
Another trans. is available from OTS of SLA $1.60 as 62-16702 [1962] 11p.

DESCRIPTORS: *Polymers, *Synthetic fibers, Cellulose, Acrylonitriles, Tensil properties, Rupture, *Plasticizers, Chemical bonds, Molecular association, Mathematical analysis.

For abstract see Technical Translations 8: 1023, 1962.

Plastics

Buchmann, Rudolf.
A METHOD FOR PRETREATING PLASTIC MATERIALS WHICH CONTAIN FOAM PROMOTING AGENTS (Verfahren zur Vorbehandlung von Treibmittelhaltigen Kunststoffen). [1962] [8]p. (foreign text included).
Order from OTS or SLA $1.10 62-18186

Trans. of German patent 1,074,854, pub. 4 Feb 60, cl. 39a 19/07, internat. cl. B 29 f, B36155 X/39a, appl. 16 June 55.

DESCRIPTORS: *Expanded plastics, *Thermoplastics, Manufacturing methods, Molding.

A method for the preliminary treatment of the present synthetic plastic materials in the form of loose particles that contain promoting agents in order to increase their volume while still keeping the loose form is described. The plastic particles are exposed for a short time to the flowing steam of between 100° to 150°C at atmospheric pressure or at a pressure only insignificantly above this. (Author)

Kuritsyna, A. D. and Meinster, P. G.
DETERMINATION OF THE HARDNESS OF POLYMERIC MATERIALS AT ELEVATED TEMPERATURES. 15 Aug 62 [6]p. 1 ref.
Order from OTS or SLA $1.10 62-18966

Trans. of #Zavodsk[aya] Lab[oratoriya] (USSR) 1962, v. 28 [no. 4] p. 491-493.

DESCRIPTORS: *Plastics, Hardness, Temperature, Measurement.

The hardness and relative elasticity of plastics were measured at temperatures of 20° to 150° C. on a Rockwell-Superficial apparatus. Treatment of the data obtained permitted detection of the critical points corresponding to transition of the polymers to different physical states. It was shown that the reversible reduction of the depth of penetration, for the majority of the plastics, has a tendency to decrease at these temperatures. (Author)

Saito, H., Uda, K., and Abe, H.
VISCOSITY STUDIES OF CELLULOSE ACETATE SOLUTIONS. PT. 5:EFFECT OF SOLVENTS AND THE DEGREE OF ACETYLATION ON THE VISCOSITY OF CONCENTRATED CELLULOSE ACETATE SOLUTIONS. [1962] 6p.
Order from ATS $8.00 ATS-13P66J

Trans. of Sen-i Gakkaishi (Japan) 1962, v. 18, no. 3, p. 240-242.

DESCRIPTORS: *Cellulose acetates, Solutions, Viscosity, Organic solvents, Acetylation.

Stäger, H. and Held, F.
INFORMATION ON THE SOFTENING OF POLYVINYL CHLORIDE. 15 Mar 47, 13p. (figs. tables refs. omitted).
Order from SLA $1.60 62-20357

Trans. of Schweizer Arch[iv für Angewandte Wissenschaft und Technik] 1946 [v. 12, no. 9] p. 278-288.

DESCRIPTORS: *Polyvinyl chloride, Plasticizers, Vinyl plastics.

Uda, K.
VISCOSITY STUDIES OF CELLULOSE ACETATE SOLUTIONS. PT. 4: VISCOSITY OF CONCENTRATED CELLULOSE TRIACETATE SOLUTIONS. [1962] 8p.
Order from ATS $10.50 ATS-12P66J

Trans. of Sen-i Gakkaishi (Japan) 1962, v. 18, no. 3, p. 236-240.

DESCRIPTORS: *Cellulose acetates, Solutions, Viscosity.

Wiegel, K.
CHANGE IN THE PHYSICAL PROPERTIES OF METHACRYLATE RESINS ON COPOLYMERISATION WITH VARIOUS MONOMERS. [1961].
Order from TTIS $10.00 TTIS-2315

Trans. of Gummi, Asbest, Kunststoffe (West Germany) 1961, v. 14, July, p. 644-650.

DESCRIPTORS: *Acrylic resins, Copolymerization, Physical properties.

Wood and Paper

BURSTING STRENGTH OF PAPER AND BOARD: MULLEN APPARATUS, PCA 8-59, PROPOSED FEB 59, ADOPTED MAR 60. July 62, 4p. 3 refs.
Order from SLA $1.10 62-18884

Trans. of unidentified mono. (rept.) from the Analysis Committee of P.C.L. (Swedish Central Labs., Stockholm).

DESCRIPTORS: *Paper, *Fiberboard, Mechanical properties, Test equipment.

MULLEN BURST STRENGTH TEST FOR BOARD: DRAFT DIN 53141 "MULLEN BURST TEST" July 62, 4p.
Order from SLA $1.10 62-18885

Trans. of Allgemeine Papier-Rundschau (West Germany) 1962, no. 6, p. 283-285.

DESCRIPTORS: *Fiberboard, Standards, Test methods, Rupture, Mechanical properties.

Jayme, George; Gasche, Urs; and Duback, Max.
MECHANISMS IN ACID SULPHITE COOKING WITH CALCIUM OR SODA BASE. [1962] [15]p. 22 refs.
Order from SLA $1.60 62-18917

Trans. of das Papier (West Germany) 1961, v. 15, p. 538-546.

DESCRIPTORS: *Wood pulp, *Sulfites, Processing, Mechanical properties, *Paper industry, Manufacturing methods, Chemical analysis.

Sobczak, Kazimierz S.
THE INFLUENCE OF SEASONING AND PLASTICIZING STEAMING ON PERMANENT CHANGES IN THE MECHANICAL AND PHYSICAL PROPERTIES OF BEECH-WOOD (Wplyw Sezonowania i Parowania Uplastyczniajacego na Trwala Zmiane Niektorych Mechanicznych i Fizycznych Wlasnosci Drewna Bukowego) tr. by T. Potulicka. 1962 [16]p. 10 refs. PL-480 Agr.
Order from OTS $0.50 60-21392

Trans. of Sylwan (Poland) 1959, v. 103, no. 4, p. 5-22.

DESCRIPTORS: *Wood, *Aging, *Steam, Processing, Mechanical properties, Physical properties, Compressive properties, Tensile properties, Elasticity, Impact shock, Colors, Density.

The properties of wood at various stages of seasoning were investigated (at monthly intervals for basic experiment, and in the first and seventh month of seasoning for control experiment). The research comprised raw wood (not steamed), and previously steamed wood. In both cases, following properties were examined: Compressive strength parallel to the grain, Tensile strength parallel to the grain, Static bending strength, Modulus of elasticity and static bending stress, Impact resistance, Specific gravity and Color of wood. This selection of the properties examined resulted from the following facts: (1) the above mentioned properties are essential to the design and use of furniture; (2) the modulus of elasticity and static bending stress, especially impact resistance are a basic test for assessing the flexibility of the raw material; (3) the variations in specific gravity are an index of quantitative transformations occurring in wood; (4) the color of wood determines the esthetic values of wood articles. Moreover, in the course of the test, data were collected on moisture content variations occurring under the influence of rationally conducted plasticizing steaming. (Author)

MATHEMATICS

Anosov, D. V.
LENIN PRIZE AWARDED TO SOVIET MATHEMATICIANS. 19 Feb 63 [5]p. JPRS: 17718.
Order from OTS $0.50 63-21168

Trans. of Priroda (USSR) 1962 [v. 51] no. 12, p. 46-49.

DESCRIPTORS: *Mathematicians, Personnel, *Awards, Differential equations, Control, Theory, Calculus of variations.

Chetaev, N. G.
ON THE CHOICE OF THE PARAMETERS OF STABLE MECHANICAL SYSTEMS (O Vybore Parametrov Ustoichivoi Mekhanicheskoi Sistemy) tr. by William G. Vogt. 7 Feb 62, 4p. 1 ref. Control Theory Group Technical rept. no. 12.
Order from Dept. of Electrical Engineering, U. of Pittsburgh, Pittsburgh 13, Pa.

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1951, v. 15, p. 371-372.

DESCRIPTORS: *Equation of motion, Differential equations, Stability, *Mechanics, Control, Perturbation theory.

Erugin, N. P.
QUALITATIVE METHODS IN THE THEORY OF STABILITY. July 60 [32]p. 35 refs.
Order from OTS or SLA $3.60 62-20394

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1955, v. 19, no. 5, p. 599-616.

DESCRIPTORS: *Differential equations, *Numerical methods and procedures, Equations of motion, Stability Theory.

This is a survey of the results in the theory of stability found by Qualitative and Lyapunov methods. (Author)

Grobman, D. M.
TOPOLOGICAL CLASSIFICATION OF THE NEIGHBORHOODS OF A SINGULAR POINT IN N-DIMENSIONAL SPACE, tr. by B. W. Kuvshinoff. 27 Aug 62, 22p. 6 refs. APL/JHU TG 230-T325.
Order from OTS $0.75 62-11797

Trans. of Matematicheskii Sbornik (USSR) 1962, v. 56[98] no. 1, p. 77-93.

DESCRIPTORS: *Differential equations, *Topology, Vector analysis, Integrals.

In this paper we solve the problem stated by V. V. Nemytskii: to determine the conditions under which systems $\frac{dx}{dt} = Ax + f(x)$ and $\frac{dy}{dt} = Ay$ are topologically equivalent near a singular point. (Here x, y, f(x) are n-dimensional vectors; A is a constant matrix of order

Komleva, E. A.
ON ASYMPTOTIC PROPERTIES OF POSITIVE METHODS OF SUMMING FOURIER SERIES. [1960] 7p. 5 refs. MDF K 213.
Order from OTS $0.50 62-11466

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedenii]. Matem[atika] (USSR) 1959, no. 4(11), p. 89-93.

DESCRIPTORS: *Fourier analysis, *Series, Integration.

A generalization is presented of the result of P. P. Korovkin (Usp. Mat. Nauk 13; no. 6, 99-103, 1958).

Moiseev, N.
ON THE PROBABILITY OF STABILITY ACCORDING TO LYAPUNOV (Uber die Wahrscheinlichkeit der Stabilität nach Liapunoff) tr. by William G. Vogt. 3 Jan 62, 4p. 4 refs. Control Theory Group Technical rept. no. 11.
Order from Dept. of Electrical Engineering U. of Pittsburgh, Pittsburgh 13, Pa.

Trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1936, v. 1(10) no. 5(82) p. 215-217.

DESCRIPTORS: *Equations of motion, *Differential equations, Stability, Theory, Probability, Control.

Ostrowski, Alexander.
ON THE CONVERGENCE AND ESTIMATION OF ERRORS IN SOME METHODS OF SOLUTION OF NUMERICAL EQUATIONS (Sur la Convergence et l'Estimation des Erreurs dans Quelques Procédés de Résolution des Équations Numériques) tr. by A. A. Gibb. Technical rept. no. 7 on Contract Nonr-225(37). 30 Aug 60 [40]p. 11 refs. AD-245 789.
Order from OTS or SLA $3.60 62-25516

Trans. from the French of mono. Sbornik Posvyashchenii Pamyati D. A. Grave, Moscow, 1940, p. 213-234.

DESCRIPTORS: *Numerical methods and procedures, Errors, Differential equations, Complex variables, Series, Sequences, Fourier analysis.

Razumikhin, B. S.
ON THE STABILITY OF THE TRIVIAL SOLUTION OF SECOND ORDER SYSTEMS. Sep 62 [12]p. 6 refs.
Order from OTS or SLA $1.60 62-20396

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1955, v. 19, no. 3, p. 279-286.

DESCRIPTORS: *Differential equations, Equations of motion, Stability, *Numerical methods and procedures, Parabolic bodies, Geometry.

Various classes of second order systems which admit Liapunov functions of special forms are studied. The discussion is largely geometrical. (Author)

Reizin', L. E.
INVARIANCE OF THE BEHAVIOR OF INTEGRAL CURVES NEAR A SINGULAR POINT IN THREE-DIMENSIONAL SPACE. [1959] 7p. 7 refs. MDF R-118.
Order from OTS $0.50 62-11582

Trans. of N[auchnye] D[oklady] V[ysshei] Sh[koly]. Fiz[iko]-matem[aticheskie] Nauki (USSR) 1958, no. 5, p. 47-52.

DESCRIPTORS: *Differential equations, Polynomials, Functions, *Projective geometry, *Integrals, Topology.

Rumyantsev, V. V.
ON STABILITY OF MOTION RELATIVE TO PART OF THE VARIABLES (Ob Ustoichivosti Dvizheniya po Otnosheniyu k Chasti Peremennykh) tr. by William G. Vogt. 26 Oct 61, 11p. 5 refs. Control Theory Group Technical rept. no. 8.
Order from Dept. of Electrical Engineering Dept., U. of Pittsburgh, Pittsburgh 13, Pa.

Trans. of Moscow U. Vestnik. [Seriya Matematiki] Mekhaniki [Astronomii, Fiziki, Khimii] (USSR) 1957 [v. 12] no. 4, p. 9-16.

DESCRIPTORS: *Equations of motion, Differential equations, Stability, Perturbation theory, *Mechanics, Control.

Sagalovich, Yu. L.
ON A MEASURE OF THE ORDERLINESS OF A BOOLEAN FUNCTION. [June 60] 9p. 13 refs. MDF S-156; AFCRL-TN-60-593.
Order from OTS $0.50 62-11344

Trans. of A[kemiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Energ[etika] i Avtom[atika] 1960, no. 1, p. 70-75.

DESCRIPTORS: *Special functions, Mathematical logic, Switching circuits, Circuits, Entropy, Information theory.

Although almost all Boolean functions are realized by complex (in terms of the number of contacts) contact circuits, such circuits are rarely encountered in practice. The reason is that Boolean functions with a regular inner structure are more easily broken down by processing and the operating conditions of the appropriate switching circuits are more easily formulated. The most general quantitative characteristic of the inner regularity of a function is the entropy k which indicates the degree of interference-immunity of the function. The systematics of functions of logic algebra and the statistics of switching circuits can disclose the objective material for a study of certain properties of human intelligence at its contemporary level of development.

Serebryakova, V. S. and Barbashin, E. A.
THE CIRCULAR MOTIONS OF COUPLED PENDULUMS II. 30 Nov 62 [10]p. 7 refs. FTD-TT-62-1089.
Order from OTS or SLA $1.10 63-15293

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Mathematika (USSR) 1961, no. 4, [23] p. 112-118.

DESCRIPTORS: *Equations of motions, Motion, Friction, Suspension devices, Differential equations, Functions.

The motion of two pendulums fastened to a stationary axle is examined, taking into account the friction forces between them at the place of suspension. (Author)

Slavutskii, I. Sh.
ON THE NUMBER OF CLASSES OF IDEALS OF A REAL QUADRATIC FIELD. [1960] 6p. 8 refs. MDF S-174.
Order from OTS $0.50 62-11291

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii], Matematika (USSR) 1960, no. 4(17) p. 173-177.

DESCRIPTORS: *Algebra, Polynomials, Series, *Number theory.

Computing Devices

Jankowski, Tadeusz; Pelc, Jerzy and others.
DYNAMIC TRANSISTOR REALIZATION OF LOGICAL NETWORKS; THE COUNTER; REGISTER WITHOUT NEGATION; SYMMETRICAL REGISTER; MATRIX, tr. by M. Rojowska. 1962 [31]p. 11 refs. PL-480 Comm.
Order from OTS $0.50 61-11305

Trans. of Polska Akademia Nauk. Zaklad Aparatow Matematycznych. Prace, 1960, ser. B, no. 4, p. 1-20.

DESCRIPTORS: Digital computers, *Computers, Computer logic, *Transistors, *Trigger circuits, Circuits, *Pulse amplifiers, Amplifiers.

The realizations described are based on two circuits, (1) Pulse amplifier AG 307, and (2) Dynamic trigger PG 306. The pulse amplifier makes it possible to realize sums, products and delays of τ (pulse width), but the dynamic trigger is a bistable element, which makes it additionally possible to realize sums, products and negations; since the work is assumed in three phases it also enables the delay of 2 τ (or of 3 τ for rare pulses). Both circuits have the following feature in common: transformer realization together with identical level of power and output voltages. Yet the amplitudes of voltages needed to drive amplifiers and triggers are different. (Author)

Kondalev, A. I.
NEW DEVELOPMENTS IN COMPUTER MATHEMATICS AND TECHNIQUES (PROCEEDINGS OF A CONFERENCE AT THE KIEV COMPUTER CENTER AN UKRAINE SSR) [Nov 59] 6p. MDF K-198; AFCRL-TN-60-130; AD-232 681.
Order from OTS $0.50 62-11457

Trans. of Usp[ekhi] Mate[maticheskikh] Nauk (USSR) 1959, v. 14, no. 4(88) p. 237-241.

DESCRIPTORS: *Symposia, *Computers, Analog computers, Digital computers, Programming (Computers), Numerical methods and procedures.

Topics are noted of papers that were read at the conference, which was held on December 1 to 3, 1958. Authors names, and in most cases the titles of the papers, are given.

Mamonov, E. I. and Koval'skii, Yu. M.
TRANSISTORIZED CONTROL SYSTEMS FOR AN INFORMATION STORAGE DEVICE USING PIEZOELECTRIC SUBSTANCES. 28 Jan 63 [18]p. JPRS: 17323.
Order from OTS $0.50 63-21000

Trans. of Vychislitel'naya Tekhnika (USSR) 1962, v. 3, p. 112-122.

DESCRIPTORS: *Data storage systems, *Memory devices, *Control systems, Transistors, *Piezoelectric crystals, Feasibility studies, Polarization, Hysteresis.

The check of the operation of a transistorized control system with various parameter piezoelectric element matrices confirms the practical possibility of using piezoelectric element matrices for the construction of information storage devices. (Author)

MECHANICS

Chaevskii, M. I.
RESEARCH INTO THE STEADINESS OF ELASTIC SHAFTS AT VELOCITIES BEYOND THE CRITICAL VELOCITY. [1962] [12]p. 9 refs. C. E. Trans. 2315; [DSIR] NLL M. 6012.
Order from OTS or SLA $1.60 62-25923

Trans. of Akad[emiya] Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izv[estiya] 1955, no. 9, p. 107-118.

DESCRIPTORS: *Shafts, Elasticity, Velocity, Friction, Oscillation, Stabilization, Disks.

This paper reports experiments and theoretical investigations taking into account the internal friction forces in accordance with the theories that agree with the experimental data, and shows that on the motion of a vertical shaft with a disc the external friction either fails to raise the velocities at which the shaft becomes unsteady, or else, enables it to remain steady beyond the critical velocity. It is shown that if the motion of a vertical shaft is steady, then it will be steady when the shaft is arranged horizontally. (Author)

Kasimov, B. S. and Zigmund, F. F.
THE RELATIONSHIPS IN FILM FLOW ON A VERTICAL CYLINDRICAL TUBE. [1962] 6p. 9 refs.
Order from OTS or SLA $1.10 AEC-tr-5519

Trans. of Inzh[enerno]-Fiz[icheskii Zhurnal] (USSR) 1962, v. 5, no. 4, p. 71-74.
Another trans. is available from ATS $5.50 as ATS-25P62R [1962] 5p.

DESCRIPTORS: *Cylindrical bodies, *Fluid dynamics, Fluid flow, Thin films, Laminar boundary layer, Mathematical analysis, Taylor's series, Differential equations.

Kosevich, A. M.
AN EQUATION OF DISLOCATION MOTION. 5 Feb 63 [44]p. 14 refs. JPRS: 17473.
Order from OTS $1.25 63-21055

Trans. of #Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1962, v. 43, no. 2, p. 637-648.

DESCRIPTORS: *Equations of motion, *Elasticity, Deformation, Stresses, Tensor analysis, Special functions.

The Lagrange function for an elastic field and system o dislocations is set up. The equation of motion of a dislocation in an external stress field is derived. The concept of an effective dislocation mass is introduced and the order of magnitude of the mass per unit length of a dislocation loop is extimated. (Author)

Lekhnitskii, S. G.
ANISOTROPIC PLATES. [1961] 352p. 80 refs.
Order from OTS or SLA $21.00 61-16155

Trans. of mono. [Anizotropnie Plastinki, Moscow, 1947].

DESCRIPTORS: *Metal plates, Anisotropy, Elasticity, Beams, Rods, Structural parts, Deflection, Stresses, Oscillation, Stability, Load distribution, Mechanics, Sheets.

Contents:
Preface
Basic equations of the theory of elasticity for an anisotropic body
The plane problem of the theory of elasticity for an anisotropic body
The bending of anisotropic beams and curved bars
Stress distribution in an infinite elastic medium
Stress concentration around an elliptical and a circular hole
Stress distribution in an elliptical and in a circular plate
An approximate case of stress determination in a plate with weak anisotropy
Theory of the bending of anisotropic plates
Bending of plates under normal load
Bending of plates under loads distributed along the edge
Transverse oscillations of a plate
Fundamentals of the theory of plate stability
Stability of a rectangular plate and of a strip under distributed load
Stability of plates compressed by concentrated forces
Stability of plates reinforced by stiff ribs.

Lenskii, V. S. and Fomina, L. N.
PROPAGATION OF UNIDIMENSIONAL WAVES IN MATERIALS WITH DELAYED YIELDING (Rasprostranenie Odnomernykh Voln v Materialakh s Zapazduzyvayushchei Tekuchest'yu) tr. by S. Shewchuck. [1962] 14p. (foreign text included) 11 refs.
Order from OTS or SLA $1.60 UCRL Trans-729

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1959, no. 3, p. 133-136.

DESCRIPTORS: *Mechanical waves, Propagation, Elasticity, Plasticity, Deformation, Steel, Rods, Mechanical properties.

Lomakin, V. A.
THE UNIDIMENSIONAL PROBLEM OF THERMAL STRESSES IN ELASTO-PLASTIC MEDIA, tr. by Lionel Mote. [1962] [9]p. 4 refs. TRC Trans. no. 1066; [DSIR] NLL M. 4942.
Order from OTS or SLA $1.10 62-25886

Trans. of Akad[emiya] Nauk SSSR. [Institut Mekhaniki] Inzhenernyi Sbornik, 1959, v. 25, p. 174-178.

DESCRIPTORS: *Heat transfer, *Thermal stresses, Materials, Cylindrical bodies, Spheres, Sheets, Plasticity, Elasticity.

Lur'e, A. I.
STRESS CONCENTRATION IN THE NEIGHBORHOOD OF AN OPENING ON THE SURFACE OF A CIRCULA CYLINDER (Kontsentratsiya Naprazhenii v Oblasti Otverstiya na Poverkhnosti Krugovogo Tsilindra) tr. by G. N. Gibson. Aug 61 [11]p. DSIR Library Communication no. 1066; NLL M. 4813.
Order from OTS or SLA $1.60 62-25370

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1946, v. 10, no. 3, p. 397-405.
Another trans. is available from OTS or SLA $1.60 as 62-13252, IMM-NYU-280, Nov 60 [19]p.

DESCRIPTORS: Cylindrical bodies, Stresses, Structural shells, Shear stresses, Theory, Mathematical analysis.

For abstract see Technical Translations 7: 676, 1962

Mikhailov, A. A. and Lipin, A. I.
INVESTIGATING THE PERFORMANCE OF CORRODED UNITS OF HYDRAULIC AND PNEUMATIC SYSTEMS. 23 Jan 63 [20]p. JPRS: 17253.
Order from OTS or SLA $1.60 63-15354

Trans. of Vestnik Mashinostroeniya (USSR) 1962 [v. 42] no. 7, p. 38-41.

DESCRIPTORS: *Hydraulic systems, *Pneumatic systems, Control systems, Cylindrical bodies, *Corrosion.

The obtained results of the experimental tests, with a consideration for the increased number of cycles in the testing program, permits the following recommendations to be made concerning the repeated resource of hydraulic and pneumatic system cylinders (chromed and non-chromed) having the following corrosive actions: (1) the corrosion depth for cylinders operating in systems with AMG-10 oil is not more than 0.9 mm, and not more than 0.6 mm with alcohol-glycerine mixture and air. With an increased (repaired) cylinder diameter, the corrosion depth is decreased by a value equal to the decreased thickness of its wall from the nominal size; (2) the length of the corrosive actions, in the form of lines, must not exceed 10 mm (if the distance between them is not less than 30 mm); (3) the number of corrosive pits with a diameter or length of not over 1 mm must not be more than 7 to 1 cm^2 (this can include one corrosion defect in the form of a line having a length of up to 10 mm); (4) the number of corrosive actions with a diameter of 2-3 mm must not exceed 3 per 1 cm^2. (Author)

Polyaev, V. N.
EXPERIMENTAL INVESTIGATION OF THE FLOW OF A VAPORIZED LIQUID FILM ALONG THE SURFACE OF A CONE BLOWN BY GAS. 19 Sep 62 [16]p. 2 refs. FTD-TT-62-1031; AD-287 701.
Order from OTS or SLA $1.60 63-13213

Unedited rough draft trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Mashinostroenie (USSR) 1960, no. 5, p. 140-148.

DESCRIPTORS: *Fluid flow, *Vaporization, Surfaces, Gases, Liquids, Films, Velocity, *Film cooling, Conical bodies, Gas flow, Temperature.

A method is examined for protecting a hot wall by creating a liquid film on its surface. Results are cited of an experiment concerning the flow of a liquid film along a smooth surface of a cone, past which flows a high temperature gas, and recommendations are given for an undetached flow of a liquid (water) along the cone surface. A formula is obtained for determining the initial flow velocity of a liquid film (water) relative to the velocity of the free-stream flow. (Author)

Riz, P. M.
ELASTIC CONSTANTS IN THE NON-LINEAR THEORY OF ELASTICITY, tr. by George F. Hill. 11 May 62 [5]p. 1 ref. [AMC] (Redstone) Trans-nr-23-62.
Order from OTS or SLA $1.10 62-24799

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1947, v. 11, no. 4, p. 493-494.
Another trans is available from OTS or SLA $1.10 as 61-19573, JPRS-R-493-N [1961] [4]p.

DESCRIPTORS: *Elasticity, Theory, Deformation, Stresses, Nonlinear systems.

For abstract see Technical Translation 7: 96, 1962.

Sedov, L. I.
SIMILARITY AND DIMENSIONAL METHODS IN MECHANICS, 3D REV. ED.: TABLE OF CONTENTS. [1961] 2p. MDF S-125.
Order from OTS $0.50 62-11380

Partial trans. (table of contents) of mono. Metody Podobiya i Razmernosti v Mekhanike, 3d rev. ed., Moscow, 1954, 328p.

DESCRIPTORS: Literature, *Mechanics, Indexes.

Aerodynamics and Pneumatics

Chernyi, G. G.
BOUNDARY LAYER WITH A SURFACE OF DISCONTINUITY FLOW OVER A PLATE WITH FLUID ESCAPING THROUGH ITS SURFACE [Pogranichnyi Sloi s Poverkhnost'yu Razryva. Obtekanie Plastiny s Prosachivaniem Zhidkosti Skvoz' Ee Poverkhnost']. [1961] 7p. 3 refs. MDF C-105.
Order from OTS or SLA $1.10 62-23045

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 100, no. 5, p. 867-870.

DESCRIPTORS: *Fluid flow, Boundary layer, Surfaces, Metal plates, *Gas flow, Viscosity, Specific heat.

Relations are given between the flow parameters on a surface of discontinuity within the boundary layer. An example is given of the solution of the problem of a boundary layer without mass flow through the surface of discontinuity. (Author)

Gribkova, S. I.
STUDY OF THE TEMPERATURE JUMP IN RARIFIED GASES (Izuchenie Temperaurnogo Skachka v Razrezhennykh Gazakh) tr. by S. Shewchuck. [1962] 12p. (foreign text included) 1 ref.
Order from OTS or SLA $1.60 UCRL Trans-731(L)

Trans. of Moscow U. Vestnik. Seriya 3: Fizika, Astronomiya (USSR) 1960, v. 15, no. 4, p. 59-63.

DESCRIPTORS: *Superaerodynamics, Heat transfer, Measurement, *Thermal conductivity, Gases, Gas flow, Air, Ethers.

The results of experiments are presented on measurement of heat flow across a cylindrical layer of rarified gas. The coefficients of the temperature jump are determined at the border of the rarified gas and solid wall for air and a series of monoatomic gases. The amount of the temperature jump is studied as a function of the surface temperature. (Author)

Kastelin, O. N., Mit'kina, E. A., and Predvoditelev, A. S.
MELTING OF A BODY IN A SUPERSONIC FLOW. [1959] 3p. MDF K-174.
Order from OTS $0.50 62-11311

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya. Energ[etika] i Avto[matika] 1959, no. 2, p. 140-141.

DESCRIPTORS: *Conical bodies, *Nose cones, Aerodynamic configurations, Melting, *Supersonics, *Aerodynamic heating, Shock waves, Stagnation point, Alloys, Thermodynamics, Model tests.

Results, obtained on models made from Wood's alloy at M= 1.7, and a total adiabatic stagnation temperature of 88 to 89°C indicate that the most intense destruction of a body in a supersonic flow occurs behind the shockwave on the nose. The cone melting occurred at a constant rate, independent of the cone vertex angle.

Kiselev, A. A.
SOLUTION OF THE LINEARIZED EQUATIONS OF NONSTEADY VISCOUS INCOMPRESSIBLE FLUID FLOW IN A BOUNDED REGION [Reshenie Linearizirovannykh Uravnenii Nestatsionarnogo Techeniya Vyazkoi Neszhimaemoi Zhidkosti v Organichennoi Oblasti]. [1961] 7p. 10 refs. MDF K-120.
Order from OTS or SLA $1.10 62-23160

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 101, no. 1, p. 43-46.

DESCRIPTORS: *Fluid flow, Viscosity, Boundary layer, Functional analysis.

The linearized equations of viscous, incompressible fluid motion for three space variables were investigated. The proposed method was used in the plane motion case and the existence and uniqueness theorems for the boundary problem were established. (Author)

Tsynkova, O. E.
GAS MOTION IN CHANNELS OF FINITE LENGTH UNDER VARIABLE COUNTER-PRESSURE (Dvizheniya Gaza v Kanalakh Konechnoi Dliny pri Peremennom Protivodavlenii) tr. by Sergey Shewchuck. Feb 62, 30p. (foreign text included) 3 refs.
Order from OTS or SLA $2.60 UCRL Trans-788 (L)

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1959, no. 3, p. 15-24.

DESCRIPTORS: *Gas flow, Pressure, Density, Velocity, Temperature, Entropy, *Fluid mechanics, Supersonic flow, Subsonic flow.

The present report analyzes (also in the linear approximation) the problem of gas flow in channels of finite length with injection and suction across an opening in the walls and with variable area of "closing" cross section at the exit from the channel. A solution is derived for two cases: (1) The main flow in the channel is divided by the compression jump into supersonic and subsonic parts. (2) The main flow in the channel is purely subsonic.

Hydrodynamics, Hydraulics, and Hydrostatics

ANTI-PUMPING DEVICE FOR PRESSURE REGULATOR, tr. by JR-P. 28 Nov 62, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-13433

Trans. of French patent 1,037,521, gr. 5, cl. 3, by Compagnie pour la Fabrication des Compteurs et Matérial d'Usines à Gas, appl. 25 May 51, granted 29 Apr 53, pub. 17 Sep 53.

DESCRIPTORS: *Pressure regulators, Pitot tubes, Hydraulic systems, Diaphragms (Mechanics).

Anti-pumping device for pressure regulator comprising below the diaphragm a bypass circulation established between a Pitot tube and a free space around the axis of the diaphragm is described. (Author)

[RESEARCH ON] VIBRATIONS AND LOAD LOSSES IN TUBULAR CLUSTERS. Special rept. no. 2, Mar-Nov 61. [1962] 115p. SOGREAH R-8107.
Order from OTS or SLA $9.60 EURAEC-286

Trans. of a rept. from Société Grenobloise d'Étude et d'Applications Hydrauliques (France) Jan 62.

DESCRIPTORS: *Hydraulic models, Cylindrical bodies, Rods, Girders, Elasticity, Vibration, *Mechanical waves, Load distribution, Hydraulic fluids, Fluid flow, Vortices, Harmonic analysis, Differential equations, *Hydraulic research.

Contents:
Theoretical considerations - Calculation of the frequency in air and in water
Experimental study of the vibration of tubular elements - Method and results
Experimental study of the vibration of nests of tubes in air and in water (See also EURAEC-160)

Zhukauskas, A. A. and Shlanchyauskas, A. A.
HEAT EMISSION AND RESISTANCE OF CHECKERED TUBE-BUNDLES IN A TRANSVERSE FLUID FLOW. [1962] [9]p. 9 refs. C. E. Trans. 2412; [DSIR] NLL M. 6018.
Order from OTS or SLA $1.10 62-25929

Trans. of Teploenergetika (USSR) 1961 [v. 8] no. 2, p. 72-75.

DESCRIPTORS: *Heat transfer, *Fluid flow, Resistance, Pipes.

An experimental investigation has been carried out on heat emission and hydraulic resistance of ten smooth tubular checkered bundles in transverse flows of air, water and transformer oil. The Reynolds number was varied from 10^3 to 3.10^3 and the Pr number from 0.71 to 350. (Author)

METALLURGY

METALLURGY, METALLOGRAPHY, AND PHYSICAL-CHEMICAL INVESTIGATION METHODS: SELECTED ARTICLES (Metallurgiya, Metallovedenie Fiziko-Khimicheskie Metody Issledovaniya). 7 Sep 62 [145]p. (figs. omitted) 186 refs. FTD-TT-62-134; AD-287 702.
Order from OTS or SLA $11.00 63-13174

Unedited rough draft trans. of [Akademiya Nauk SSSR]. Institut Metallurgii. Trudy, 1961, no. 8, p. 54-106, 120-127, 149-165, 269-277.

DESCRIPTORS: Metallurgy, *Alloys, *Metals, Physical chemistry, Titanium alloys, Vanadium alloys, Iron alloys, Niobium alloys, Hardness, Microstructure, Vanadium, Phase studies, Polarization, Metallurgical analysis, Crystal structure, Copper alloys, Carbon alloys, Aluminum alloys, Steel, Corrosion, Stresses, X-ray diffraction analysis.

Contents:
A phase equilibrium diagram for the titanium-vanadium iron system, by Bi Tsin-khua and I. I. Kornilov
Vanadium and the areas of its application, by N. I. Kornilov and N. M. Matveeva
The metallochemistry of vanadium, by I. I. Kornilov and M. M. Matveeva
Research on vanadium-copper-carbon and vanadium-copper-aluminum alloys, by E. M. Savitskii and others
The influence of tensile stresses on the corrosion rate of metals, by V. V. Romanov
The influence of polarization and PB-5 inhibitor on the corrosive decrepitation of carbon steels, by S. B. Fel'gina and V. V. Romanov
The structure and properties of alloys at the niobium corner of the niobium-vanadium-aluminum system, by V. V. Baron and others.

METHOD FOR THE PRODUCTION OF ELECTROLYTICALLY-FORMED COATINGS ON ALUMINIUM (Verfahren zur Herstellung von Galvanischen Ueberzügen auf Aluminium). [1962] [9]p. (foreign text included).
Order from OTS or SLA $1.10 62-18481

Trans. of German patent 71,384, 28 Oct 1893, cl. 48, pat. from 16 Aug 1892.

DESCRIPTORS: *Aluminum, *Metal coatings, *Electrodeposition.

PHYSICS OF METALS AND METALLOGRAPHY, 1962, VOL. 14, NO. 1: [SELECTED] TRANSLATIONS. 13 Feb 63 [27]p. 17 refs. JPRS: 17613.
Order from OTS $0.75 63-21122

Trans. of #Fizika Metallov i Metallovedenie (USSR) 1962, v. 14, no. 1, p. 10-16, 137-139, 148-150.

DESCRIPTORS: *Powder metallurgy, *Magnetic materials, Sheets, Bonding, *Iron, *Nickel, *Single crystals, *Copper, Electrons, Gamma rays, *Radiation effects, *Crystal lattice defects, *Heat resistant alloys, *Molybdenum alloys, *Rhenium alloys, Deformation, *Twinning (Crystallography), Metallography.

THE PRODUCTION AND TREATMENT OF STEEL AND ALLOYS, PT. 1: TABLE OF CONTENTS AND SELECTED TRANSLATIONS (Proizvodstvo i Obrabotka Stali i Splavov). Nov 60 [234]p. (figs. omitted) 104 refs. MCL-595, pt. 1; AD-258 463.
Order from OTS or SLA $15.50 61-27034

Trans. of Institut Stali, Moscow. Sbornik (USSR) 1958, v. 38, p. 5-195.
##Other translations of p. 79-87 and 185-195 are available from HB as HB-4597 $7.25 and HB-4674 $6.80.

DESCRIPTORS: *Symposia, *Steel, *Alloys, Processing, Ores, Minerals, Melting, Reduction, Purification, Heat transfer, Metallurgy, Metals, Industrial equipment, Carbon, Oxygen, Production, Steel industry.

Contents:
On the problem concerning the effect of the physical from rolled powders, by O. A. Katrus
Relationship of the number of defects in single crystals to the direction of irradiation, by M. V. Fedulov
Mechanism of twinning in the deformation of single crystals of a Mo-35%-re alloy, by E. M. Savitskii.

RHENIUM IN SOVIET POWDER METALLURGY. 8 Feb 63 [65]p. 35 refs. JPRS: 17539.
Order from OTS $1.75 63-21085

Trans. of mono. Renii Trudy Vsesoyuznogo Soveshchanii po Probleme Reniya, 26-27 May 58 (Rhenium, Reports of the All-Union Conference on the Problem of Rhenium) Moscow, 1961, p. 75-80, 100-126, 159-161.

DESCRIPTORS: *Powder metallurgy, *Rhenium, Purification, Electrolytes, Electrolysis, *Rhenium alloys, Physical properties, Chemical properties, *Tungsten alloys, Production.

Contents:
Methods of obtaining high-purity rhenium, by V. I. Bibikova and others
Obtaining rhenium in powder form by the electrolytic method, by S. I. Sklyarenko and others
The physicochemical properties and yields of application of rhenium and its alloys, by E. M. Savitskii and M. A. Tylkina
Production of rhenium and its tungsten alloys, by E. I. Pavlova.

structure of agglomerates on their metallurgical characteristics, by G. A. Chilingarov and A. N. Pokhvistnev
Investigation of the mineralogical composition of fluxed agglomerates of Krivoi Rog iron ores, by E. F. Vegman
Regularities of the processes of steel refining in a flow gaseous oxidizer, by S. I. Fillipov and others
##On the initial temperatures of the reduction of metal oxides by a solid carbon, by V. P. Elutin and others
Intensification of decarburization in open-hearth melting of high-phosphorus pig iron, by E. A. Turkebaev and G. N. Oiks
Heat absorption of an open-hearth bath in the process of melting as a basis for thermal work control, by G. M. Glinkov
Viscosity and the electric properties of liquid alloys of certain binary systems, by D. K. Belaschenko and A. P. Lyubimov
Heat exchange in the bath of an electric-arc furnace during steady flow of heat, by N. V. Okorokov and L. A. Mal'tsev
##The flow of metal and temperature levelling in a bath with use of electromagnetic stirring, by N. V. Okorokov and L. A. Mal'tsev.

SOVIET STUDIES ON POWDER METALLURGY.
6 Feb 63 [45]p. 35 refs. JPRS: 17499.
Order from OTS $1.25 63-21061

Trans. of Issledovaniya po Zharoprochnym Splavam (USSR) 1959, v. 4, p. 301-322 and 352-359.

DESCRIPTORS: *Powder metallurgy, Creep, Diffusion, Sintering, Carbides, Chromium compounds, alloys, Powder alloys, Industrial production.

Contents:
Investigation of diffusion creep in powder metal bodies, by B. Ya. Pines and A. F. Sirenko
Certain problems on the theory of sintering and creep, by M. Yu. Bal'shin
Properties of chromium carbides and powder metal alloys on their base, by V. V. Grigor'eva and V. N. Klimenko
Production of powders of alloys by the method of diffusion, saturation, by I. M. Fedorchenko and N. A. Filatova

Asche, Otto.
PROFILE CUTTER WITH EXCHANGEABLE BLADES.
[1962] 2p. (figs. omitted).
Order from OTS or SLA $1.10 62-18451

Trans. of German patent 160,851, 22 May 05, cl. 49 a, pat. from 20 Dec 03.

DESCRIPTORS: *Cutting tools, Steel, Metal plates.

Bernhardt, H.
PROCESS FOR THE CEMENTATION OF METALS, PARTICULARLY BISMUTH, FROM EXTREMELY DILUTE SOLUTIONS. 1962.
Order from TTIS $6.30 TTIS NS 63

Trans. of East German patent 23,498, appl. 9 Feb 56, pub. 2 Aug 62.

DESCRIPTORS: Metals, *Bismuth, Manufacturing methods, Solutions.

Bondarev, Yu. E.
INFLUENCE OF NOTCHES DURING BENDING, tr. by George N. Kasachkoff and George F. Hill. 7 Mar 62 [6]p. 2 refs. [AMC] (Redstone) Trans-nr 14-62.
Order from OTS or SLA $1.10 62-23317

Trans. of #Fizika Metallov i Metallovedenie (USSR) 1958, v. 6, no. 1, p. 181-183.

DESCRIPTORS: Metals, *Brass, *Aluminum, *Steel, *Deformation, Plasticity, Tests.

A study was made to determine whether the influence of a notch has any relation to the uniform lengthening of metal. The study was performed on impact samples with a square cross section, of standard sizes, with and without notch. The deformed volumes were determined with a scaling grid having 1 mm square cells, drawn with the aid of an instrumental microscope. The tests showed that the effect of notches and uniform lengthening are closely connected.

Borchers, H. and Schlicht, A.
IMPROVEMENTS OF THE END QUENCH TEST AND ITS APPLICABILITY TO VERY ACCURATE INVESTIGATIONS. Jan 63.
Order from BISI £6 BISI-2999

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1961, v. 32 [no. 9] p. 637-643.

DESCRIPTORS: *Annealing, Hardening, *Quenching (Cooling), Tests.

Bückle, H.
MOLYBDENUM ALLOYS AND THEIR PROTECTION AGAINST OXIDATION (Les Allaiges de Molybdène et Leur Protection contre l'Oxydation). [1962] [67]p. (foreign text included) 29 refs.
Order from SLA $6.60 62-18187

Trans. of la Recherche Aéronautique (France) 1957, no. 61, p. 35-52.

DESCRIPTORS: *Molybdenum alloys, *Oxidation inhibitors, *Antioxidants, Temperature, Refractory materials, Metals, Coatings, Cermets, Heat resistant alloys, Oxidation, Thermal stresses, Mechanical properties.

Chabelka, J.
PRACTICAL APPLICATIONS OF THE MODERN ACHIEVEMENTS IN WELDING METALLURGY.
Apr 59 [13]p. BISI Trans. no. 1204; [DSIR] NLL M.4570.
Order from OTS or SLA $1.60 62-24213

Trans. of Avtom[aticheskaya] Svarka (USSR) 1958 [v. 11] no. 6, p. 3-12.

DESCRIPTORS: *Welding, Metallurgy, *Steel, Gases.

Chizhikov, Yu. M.
ON THE CALCULATION OF THE PRESSURE OF METAL ON ROLLS. Mar 59 [13]p. 12 refs. BISI Trans. no. 1200; [DSIR] NLL M.4564.
Order from OTS or SLA $1.60 62-24209

Trans. of Stal' (USSR) 1958, v. 18, no. 5, p. 428-433.

DESCRIPTORS: *Rolling mills, Metals, Deformation, Resistance, Stresses, *Steel industry.

Garbe, H. and Brandes, G.
OPERATION OF MODERN SINTER PLANTS. Dec 62, 4200 words.
Order from HB $9.75 HB-5715

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 19, p. 1273-1278

DESCRIPTORS: *Industrial plants, Automation, *Sintering.

Marinesco, N.
SUPERSONICS IN METALLURGY. [1962] 16p. (figs. omitted).
Order from SLA $1.60 62-18891

Trans. of Chimie et Industrie (France) 1946, v. 55, p. 180-191.

DESCRIPTORS: *Metallurgy, *Ultrasonics, *Non-destructive testing.

Medvedev, A. S.
AGING OF TIN-LEAD SOLDERS AND OF JOINTS MADE WITH THEM. [1962] 11p. 10 refs.
Order from OTS or SLA $1.60 AEC-tr-5463

Trans. of Metallovedenie i [Termicheskaya] Obrabotka Metallov (USSR) 1956, no. 7, p. 16-23.

DESCRIPTORS: *Soldering alloys, *Tin alloys, *Lead alloys, Soldered joints, Aging (Materials), Tensile properties, Microstructure.

The natural aging of standard tin-lead solders and of joints made with them results in lowering their short-time strength, though no changes may be found in their microstructure. The practice of allowing for high safety factors in soldered joints makes it possible to ignore this softening without endangering the reliability of the soldered parts. High temperatures, up to 100° C and more, intensify the aging processes and may cause visible structural changes in solders and soldered joints Continued exposure to high temperatures of copper and brass parts soldered with tin-lead solders entails a considerable decrease in the short-time strength of the soldered joints and their embrittlement. (Author)

Neumann, A.
WELDING RESEARCH IN THE SOVIET UNION. [1962] 22p.
Order from SLA $2.60 62-20050

Trans. of Schweisstechnik (Germany) 1956, v. 6, no. 7, p. 194-199.

DESCRIPTORS: *Welding, *Arc welding, *Resistance welding, Welded joints, Metallurgy, Industrial research.

Normand, A.
BRIGHT ANNEALING OF METALS AND ALLOYS. 6 June 46, 4p. (figs. tables refs. omitted).
Order from SLA $1.10 62-18681

Trans. of la Pratique des Industries Mécaniques (France) 1941, v. 23, Aug, p. 107-109.

DESCRIPTORS: *Metals, *Alloys, *Annealing.

Pashkov, I. V. and Lyulenkov, G. G.
FIRST APPLICATIONS OF ALUMINUM SUBMERGED ARC WELDING. [1962] [7]p.
Order from OTS or SLA $1.10 62-20043

Trans. of Svarochnoe Proizvodstvo (USSR) 1957 [no. 1] p. 18-20.

DESCRIPTORS: *Arc welding, *Aluminum, Welded joints, Welding fluxes.

Plyatskii, V. M.
PROCESSES OF FORMING METAL UNDER PRESSURE IN THE LIQUID AND PLASTIC STATE AND THEIR DEVELOPMENT. May 60 [19]p. 1 ref. BISI Trans. no. 1384; [DSIR] NLL M.6338.
Order from OTS or SLA $1.60 62-25698

Trans. of Liteinoe Proizvodstvo (USSR) 1956, no. 6, p. 7-11.

DESCRIPTORS: *Liquid metals, Metal forming presses, *Casting, *Metals, Plasticity, Industrial production.

The various pressure casting and forming methods are discussed from the aspects of product quality, surface finish and metal economy. The prospects of their further development are considered.

Podgaetskii, V. V. and Mel'nik, A. V.
EFFECT OF STRUCTURE OF FLUX ON POROSITY OF WELD. July 59 [7]p. 4 refs. BISI Trans. no. 1336; [DSIR] NLL M.4727.
Order from OTS or SLA $1.10 62-24230

Trans. of Avtom[aticheskaya] Svarka (USSR) 1955 [v. 8] no. 4, p. 58-62.

DESCRIPTORS: *Welds, Porosity, *Welding fluxes, Structural properties.

In welding under a pumicelike flux with a high fluorspar and silica content, the porosity of the welds due to rust is less than in welding under a vitreous flux of the same composition. The cause of this may be the greater formation of silicon tetrafluoride in welding under the first type of flux, because of its greater surface. (Author)

Zakharov, A. F., Khilekevitch, F. A. and others.
SMELTING OF FERRO-MANGANESE IN LARGE BLAST FURNACE, tr. by J. Murray. Sep 57 [10]p. 5 refs. [BISI] Trans. no. 670; [DSIR] NLL M. 4128.
Order from OTS or SLA $1.10 62-24135

Trans. of Stal' (USSR) 1957 [v. 17] no. 7, p. 580-584.

DESCRIPTORS: *Blast furnaces, *Iron alloys, *Manganese alloys, Smelting.

When smelting ferro-manganese in a large blastfurnace on acid slags and high temperature blast, a steady, sufficiently intensive working of the furnace was achieved and the coke consumption was appreciably reduced without increasing the total manganese loss. Enrichment of the blast with oxygen did not necessitate increased humidity of the blast and drop of temperature. When smelting ferro-manganese under conditions of low coke consumption with the application of oxygen, it is necessary to follow carefully the distribution of materials over the cross section and circumference of the furnace. The possibility of smelting ferro-manganese on blast heated beyond 1000 deg. C. is proved. For a further increase of blast temperature, use of high temperature stoves and refractory lined nozzles is necessary. Smelting of ferro-manganese on acid slags does not cause complications in the servicing of slag and tuyere equipment and iron ladles. (Author)

Zinov'ev, N. V.
RESULTS OF A DISCUSSION OF THE QUALITY OF INGOT MOULDS. Apr 59, [30]p. 24 refs. BISI Trans. no. 1186; [DSIR] NLL M. 4560.
Order from OTS or SLA $2.60 62-24207

Trans. of Stal' (USSR) 1958 [v. 18] no. 11, p. 1046-1055.

DESCRIPTORS: *Castings, Quality control, Cast iron, *Molding.

Ferrous Metals

USSR INDUSTRIAL DEVELOPMENT: FERROUS METALLURGY NO. 97. 5 Feb 63 [26]p. JPRS: 17471.
Order from OTS $0.75 63-21053

Trans. of Shakhtnoe Stroitel'stvo (USSR) 1962 [v. 6] no. 11, p. 28-29; Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 11, p. 90-92; and from Pravda Ukrainy (USSR) 1962, 18 Nov, p. 3; Zarya Vostoka (USSR) 1962, 13 Nov, p. 2.

DESCRIPTORS: *Industrial production, *Metallurgy, *Centrifugal pumps, Drainage, Mining engineering, Blast furnaces, Rolling mills, Open hearth furnaces, Automation, Machines, Control, Iron industry.

Contents:
Characteristics of centrifugal depth pumps for lowering the water level in mines, by D. M. Khokhlovkin
Let us promote industrial progress in the UkSSR industries, by Lukich
On the work of the "industry of the RSFSR" pavilion at the vdnkh of the USSR in 1962, by A. F. Goncharik
Automation of agglomerate plants designed by the Rustavi Planning and Design Institute Avtomatprom, by Z. Kruashvili.

Akimenko, A. D., Korotkov, K. P. and others.
CONTINUOUS CASTING OF STEEL. 1962, 226p. 54 refs.
Order from BISI £ 4 15s BISI-2380

Trans. of mono. Osvoenie Nepriryvnoi Razlivki Stali, Leningrad, 1960.

DESCRIPTORS: *Steel, *Casting, Cast steel, Production.

Contents:
Design and operational principles of a continuous casting plant for steel production
Continuous casting practice on the present machine at Krasnoe Sormovo (Gorkii)
Research on processes taking place during continuous casting of steel.

Brhacek, L., Worniak, J. and Golonka, A.
EXPERIMENTAL DETERMINATION OF THE DISTRIBUTION OF MOLYBDENUM, VANADIUM AND CHROMIUM BETWEEN -FERRITE AND MARTENSITE IN 12% CHROME STEELS. Jan 63.
Order from BISI £2 BISI-2947

Trans. of Neue Hütte (East Germany) 1962 [v. 7, no. 11] p. 688-690.

DESCRIPTORS: *Steel, *Molybdenum, *Vanadium, *Chromium, *Ferrites, *Martensite, Distribution, Determination.

Bungardt, K. and Vollmer, H.
THE MELTING OF STEELS AND ALLOYS IN THE INDUCTION-AND ARC-VACUUM FURNACE. Feb 63.
Order from BISI £10 BISI-2876

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, [no. 7] p. 401-419.

DESCRIPTORS: Steel industry, *Steel, Alloys, *Vacuum furnaces, *Melting, Industrial equipment, *Electric furnaces.

Gridnev, V. N. and Trefilov, V. I.
STRUCTURAL CHANGES DURING THE ELECTRICAL TEMPERING OF STEEL. July 60 [14]p. 18 refs. BISI Trans. 1732; [DSIR] NLL M. 6367.
Order from OTS or SLA $1.60 62-32801

Trans. of Akad[emiya] Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1959, no. 2, p. 62-69.
Also available from BISI £5 as BISI-1732 [1960].

DESCRIPTORS: *Steel, Microstructure, Heat treatment, X-ray diffraction analysis.

Grigor'ev, F. I. [Druzhinin, I. I. and Osipov, V. G.].
POURING OF 260 TONS OF STEEL IN A CONTINUOUS CASTING MACHINE WITHOUT INTERRUPTION OF THE STREAM OF METAL. Dec 62.
Order from MT $8.60 MT Trans-279

Trans. of #Metallurg (USSR) 1962 [v. 7] no. 7, p. 22. Another trans. is available from BISI £5 as BISI-3073, Dec 62.

DESCRIPTORS: Manufacturing methods, *Steel, *Casting, *Machines, Liquid metals.

Laurila, E.
PERMANENT MAGNET MAGNETIC SEPARATOR FOR DRY BENEFICIATION OF FINELY GROUND STRONGLY MAGNETIC IRON ORES. Jan 63.
Order from BISI £2 15s BISI-3019

Trans. of Stahl und Eisen (West Germany) 1954, v. 74 [no. 24] p. 1659-1661.

DESCRIPTORS: *Magnets, Magnetic fields, *Iron, *Ores, *Magnetic separation.

Pomey, Jacques and Coudray, Raymond.
NATURE OF CARBIDES FORMED IN MARTENSITE TEMPERING (Carbures se Formant dans le Revenu de la Martensite). [1962] [4]p. (figs. omitted).
Order from SLA $1.10 62-18790

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1953, v. 237, no. 1, p. 62-64 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Carbides, *Martensite, Heat of formation.

Prazak, M. and Cihal, V.
POTENTIOSTATIC INVESTIGATION OF THE EFFECT OF CERTAIN ALLOYING ELEMENTS ON THE ELECTROCHEMICAL AND CORROSION PROPERTIES OF STAINLESS STEELS. Dec 62.
Order from MT $3.10 MT Trans-289 A

Partial trans. (extracts) of Corrosion Science (U. S.) 1962 [v. 2] Jan/Mar, p. 71-84.
A complete trans. is available from ATS $14.75 as ATS-67P63G [1962] 12p.

DESCRIPTORS: Electric potentials, Electrostatics, Corrosion research, *Corrosion, *Steel, Electrochemistry, *Stainless steel.

Shmelev, B. A.
METHODES FRACTIONNEES DE DOSAGE DE L'HYDROGENE DANS L'ACIER, tr. by I. Melnick. 18 Aug 59 [17]p. 4 refs. CEA Trans. no. R521.
Order from OTS or SLA $1.60 61-23757

Trans. in French of Khim. Methodi Analysa [sic] 1957, no. 3, p. 263-269.

DESCRIPTORS: *Steel, Gases, *Hydrogen, Nitrogen, Determination.

Speshkov, V. V.
DETERMINING SUITABLE CONDITIONS FOR FLAME CASE-HARDENING (Opredelenie Rezhimov Plamennoi Poverkhnostoi Zakalki). Sep 60 [10]p. 3 refs. RTS 1482
Order from OTS or SLA $1.10 61-13483

Trans. of Svarochnoe Proizvodstvo (USSR) 1958, no. 6, p. 41-49.

DESCRIPTORS: *Steel, Hardening, Heat treatment *Gas burners.

Light Metals

Lihl, F., Nachtigall, E., and Offenbartl, H.
EFFECTS OF ALLOYING ELEMENTS ON THE AS-CAST STRUCTURE AND ON THE RECRYSTALLIZATION BEHAVIOR OF ALUMINUM. [1962] 34p. (figs. omitted) 5 refs.
Order from SLA $3.60 62-18220

Trans. of mono. Internationale Leichtmetalltagung (International Light Metals Conference) (no. 4) Leoben, 1961. [Proceedings] 1962, p. 75-88.

DESCRIPTORS: *Aluminum, *Recrystallization, *Casting, *Aluminum alloys, Grains (Metallurgy), Temperature, Liquid metals, Mechanical properties, Corrosion.

Vorobiev, A. A., Kalugin, V. F. and others.
A METHOD OF CLADDING TITANIUM AND ITS ALLOYS, tr. by George F. Hill. 23 Apr 62 [2]p. [AMC] (Redstone) Trans-nr 18-62.
Order from OTS or SLA $1.10 62-24752

Trans. of #Byulleten' Izobretenii (USSR) 1960, no. 19, p. 13.

DESCRIPTORS: *Titanium, Titanium alloys, *Cladding, Aluminum alloys.

A method of cladding titanium and its alloys, in which, in order to safeguard against spontaneous combustion of articles made of titanium and its alloys, working under pressure in a medium of liquid oxygen, the initial blanks, for example, sheets of titanium or its alloys, are covered with sheets of aluminum alloy, rolled in the cold state, and the obtained sheets subjected to diffusion annealing. (Report quoted in its entirety)

Nonferrous (except light) Metals

TRANSLATIONS ON CHEMISTRY IN THE USSR (SOVIET NONFERROUS METALLURGY). 25 Jan 63 [23]p. 6 refs. JPRS: 17306.
Order from OTS or SLA $2.60 63-15373

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Chernaya Metallurgiya (USSR) 1962, no. 9, p. 160-164 and 197-205.

DESCRIPTORS: *Chemistry, *Metallurgy, *Molybdenum Recrystallization, Hardening, Grain structures (Metallurgy), *Titanium, *Titanium alloys, Combustion.

Contents:
Structural changes during hardening and recrystallization of molybdenum, by A. P. Gulyaev and others
Combustibility of titanium and its alloys, by N. V. Manuev.

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 46. 23 Jan 63 [49]p. JPRS: 17266.
Order from OTS or SLA $4.60 63-15352

Trans. of Narodnoe Khozyaistvo Kazakhstana (USSR) 1962 [v. 20] no. 8, p. 29-31, 42-46, 51-56, 65-67; Gornyi Zhurnal (USSR) 1962, no. 9, p. 26-27, 54-55, 74-75.

DESCRIPTORS: *Industrial production, *Metallurgy, Metals, Processing, Automation, Control, Copper, Lead, Zinc, Furnaces, Slags, Ores (Metal sources), Mining engineering, Minerals, Specifications, Rock (Geology), Mines, Reinforcing materials, Machines, Drilling machines, Drills, Boreholes, Cutting tools, Alloys, Fused materials, Small tools, Machine tools.

Contents:
Technical advances and problems of the Kazakh metallurgical industry, by Yu. Komlev
The road to scientific development in nonferrous metallurgy, by V. Ponomarev
Problems of mechanization and automation at the nonferrous metal producing enterprises of Kazakhstan, by K. Akhmetov and others
On the problem of ore specifications, by V. Matushevich
A technical and economical evaluation of the possibilities of application of artificial means of reinforcement of mineral rock, by V. F. Belyaev and others
A combination mucking and hauling machine model MPDR-0.12, by P. A. Mikhirev and others
An automotive boring machine, by I. S. Mel'nikov
Durability of steel drills and drill bits is increased by fusing with new alloys, by M. S. Polyak

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 49. 6 Feb 63 [36]p. JPRS: 17493.
Order from OTS $1.00 63-21059

Trans. from Stroitel'naya Gazeta (USSR) 1962, 10 Oct, 2 Nov; Kommunist, Erevan (USSR) 1962, 10 Oct; 26 Oct; Ekonomicheskaya Gazeta (USSR) 1962, no. 44(65), 37; no. 46(67) p. 21; no. 48(69) p. 35.

DESCRIPTORS: *Industrial production, *Metallurgy, Asbestos, Ores, Rock (Geology), Mineral products, Copper, Silicates, Gold, Gems(Minerals).

Contents:
Slow rate of construction at Dzhetygara asbetos combine by I.Voronoi and others
All-Union Seminar of workers of the Rock Products Industry, by R. Lerman
Copper in refuse dumps, by A. Teryaev
Scientific research institute of stone and silicates of the Armenian sovnarkhoz
Need for coordination in the work of planning institutes, by G. Lezgintsev
The pilferage of gold from gold mines, by E. Gorelov and A. Krylov
The Russian gemstone industry should be revived, by V. Antamonov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 50. 11 Feb 63 [49]p. JPRS: 17554.
Order from OTS $1.25 63-21088

Trans. of Promyshlennoe Stroitel'stvo (USSR) 1962 [v. 40] no. 9, p. 2-6; Metallurgicheskaya i Gornorudnaya Promyshlennost' (USSR) 1962, no. 5[17] p. 48-53; Montazhnye i Spetsializirovannye Raboty v Stroitel'stve (USSR) 1962 [v. 24] no. 11, p. 4-12.

DESCRIPTORS: *Industrial production, Metallurgy, *Aluminum, Production, Purification, *Electrolysis, Electrolytic cells, *Industrial plants, Construction, *Mining engineering, *Ores, *Mercury.

Contents:
Experience in building electrolysis shops by the continuous method, by I. M. Zvezdov and N. A. Vanyaev
Further developmental trends of the Nikitovskoe mercury deposit, by N. A. Egorov
Assembling the structural components of an aluminum plant, by P. K. Aver'yanov
Progressive methods in the installation of electrolyzers in the aluminum industry, by Yu. A. Belyaev
Heavy bussing of the aluminum electrolysis shops, by M. O. Shlakhter and D. M. Simonov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 51. 12 Feb 63 [45]p. JPRS: 17573.
Order from OTS $1.25 63-21094

Trans. of Gornyi Zhurnal (USSR) 1962, no. 11, p. 36-41, 46-51, 58-64, 70-74.

DESCRIPTORS: *Industrial production, Metallurgy, *Mining engineering, *Ores, Deposits, Boreholes, *Drilling machines, *Automation, *Remote control systems, Circuits, Ventilation, Heating plants, Telephone communication systems, Elevators, Locomotives, *Washing machines, Mobile.

Contents:
Mining of narrow ore bodies by means of inclined bore holes of reduced diameter, by V. N. Zakharchenko and others
Field tests of new boring machines for open mining, by A. P. Shatilov
Automation and remote control at the mines of the Tekeli combine, by E. E. Miroshnik
An efficient washing device for placer mining with bulldozers and scrapers, by E. I. Bogdanov.

Hryhor'eva, V. V. and Klymenko, V. M.
CHROMIUM CARBIDE-BASE ALLOYS. 24 Jan 63 [126]p. 55 refs. JPRS: 17275.
Order from OTS or SLA $10.10 63-15387

Trans. of mono. Splavy na Osnovi Karbidu Khromu, Kiev, 1961, 56p.

DESCRIPTORS: *Chromium compounds, *Carbides, Alloys, *Tungsten alloys, *Nickel alloys, Niobium alloys, Titanium alloys, Physical properties, Manufacturing methods, Material forming, Heat treatment, Microstructure.

Vacek, Jiri.
PRODUCTION AND PROPERTIES OF SEMI-FINISHED TANTALUM. 25 Jan 63 [32]p. 21 refs. JPRS: 17296.
Order from OTS or SLA $3.60 63-15365

Trans. of Neue Hütte (East Germany) 1957, v. 2. no. 11, p. 692-702.

DESCRIPTORS: Material forming, *Powder metallurgy, *Tantalum, Rods, Production, Sintering, Forging, Physical properties, Spectrographic analysis, Vacuum systems.

The possibilities for producing and utilizing parts of tantalum and a powder-metallurgical process are described in detail. The degree of compacting pressure for tantalum bars of finely divided tantalum metal powder has a high influence on the properties of the compacted bars. The latter are sintered under high vacuum by direct conduction of current without presintering. Detailed investigations concern the influence of sintering temperature and duration on the properties of the supersintered bars and their loss of weight and indicate different procedures for increasing sintering temperature. Measurement of temperature and of vacuum as well as spectrum analysis of the expelled gases are important. Experiments of forming supersintered bars by flat forging, pressing and rolling together with round-forging and drawing give an appreciation of finish-processing possibilities. Experiments with tantalum waste recovery are particularly significant. The properties of experimentally obtained products are given. (Author)

Structural Metallurgy and Corrosion

Brauns, Erwin. and Rahmel, Alfred.
CONCERNING THE EFFECT ON THE OXIDATION RATE OF IRON FROM TREATMENT WITH LITHIUM OXIDE VAPOR. [1962] 2p.
Order from SLA $1.10 62-18662

Partial trans. (summary) of Werkstoffe und Korrosion (West Germany) 1956 [v. 7, no. 1] p. 448-452.

DESCRIPTORS: *Iron, *Oxidation, *Lithium compounds, *Oxides, Vaporization.

Klark, G. B., Mikhailovskaya, M. I. and others.
AN ELECTROCHEMICAL METHOD FOR INVESTIGATING THE ATMOSPHERIC CORROSION OF METALS (Elektrokhimicheskii Metod Issledovaniya Atmosfernoi Korrozii Metallov) tr. by Lydia Venters. Feb 62, 14p. 16 refs.
Order from OTS or SLA $1.60 AEC-tr-5008

Trans. of Akad[emiya] Nauk SSSR. Institut Fizicheskoi Khimii. Trudy, 1959, v. 7, p. 11-21.
Another trans. is available from OTS or SLA $1.60 as 62-18773, June 62 [19]p.

DESCRIPTORS: *Electrochemistry, Metals, *Corrosion research, Moisture, Films, Electric potential, *Measuring devices (Electrical and electronic), Voltmeters, *Electrometers, Circuits.

A method for investigating the corrosion was worked out. It enables one to detect the mechanisms of electrochemical processes, which occur on the surface of metals under the adsorption films of moisture in a pure atmosphere as well as in an atmosphere contaminated with various gases. (Author)

Leclercq, D., Chevilliard, C., and Darras, R.
OXIDATION OF ORDINARY OR ALLOYED STEELS HEATED IN CARBONIC GAS UNDER PRESSURE, tr. by A. L. Monks. [1962] 43p. 10 refs.
Order from OTS or SLA $4.60 AEC-tr-5195

Trans. of Commissariat à l'Énergie Atomique (France) no. CEA-1407 [1960].

DESCRIPTORS: *Steel, Alloys, *Stainless steel, Oxidation, Reaction kinetics, *Corrosion inhibition, Additives, Aluminum

Selection experiments on the resistance of commercial steel to oxidation in carbonic gas under a pressure of 25 atm. and between 350 and 600° C were made. Comparative curves of the oxidation kinetics were obtained, and the effect of various additive elements was detected; it appeared that slight amounts of aluminum had a markedly favorable effect for slightly alloyed steels. Stainless steel 18-8 was also studied, especially in the form of thin tubes. Its behaviour is good under these conditions up to at least 600°C.

Lyashenko, V. S. and Nevzorov, B. A.
MECHANISM OF CARBON TRANSFER IN LIQUID SODIUM (Mekhanizm Perenosa Ugleroda v Zhidkom Natrii). [1962] 33p. 20 refs.
Order from OTS or SLA $3.60 AEC-tr-5408

Trans. of mono. International Atomic Energy Agency Conference on Corrosion of Reactor Materials, Salzburg, 4-9 June 62. [Proceedings] paper CN-13/41.

DESCRIPTORS: *Reactor materials, Corrosion, Liquid metals, *Sodium, *Carbon, Oxygen, Ions, Iron compounds, Carbides, Carbon compounds, Monoxides, Graphite, Deposits.

The mechanism of carbon transfer in sodium at temperatures 650° to 800°C was investigated. The carbon source was shown to be iron carbide in cast iron and steels. (Unalloyed or insufficiently alloyed with strong carbide-forming elements such as chromium, molybdenum, titanium, niobium, vanadium, etc.). The carbon carrier was found to be the gas carbon monoxide, formed at the surface of steels from carbon and oxygen ions. The rate of carbon transfer was shown to depend on the oxygen content of the sodium, on the area of the carbon-absorbing steel, and on the chemical composition of the steels. Chemical interaction of ionic forms of carbon and oxygen, and dissociation of carbon monoxide molecules on metal surfaces in sodium, were established. The cause of the formation of a black graphite deposit on iron and carbon steels in the case of carbon transfer in sodium in the presence of austenitic steels of different chemical composition was discovered.

Mikhailovskii, Yu. N. and Tomashov, N. D.
APPLICATION OF A METHOD OF POLARIZATION WITH INTERMITTENT CURRENT TO THE STUDY OF THE CORROSION PROCESSES IN MEDIA OF HIGH OHMIC RESISTANCE (Primenenie Metoda Polyarizatsii Preryvistym Tokem pri Issledovanii Korrozionnykh Protsessov v Sredakh s Vysokim Omicheskim Soprotivleniem) tr. by Lydia Venters. Feb 62, 14p. 9 refs.
Order from OTS or SLA $1.60 AEC-tr-5006

Trans. of Akad[emiya] Nauk SSSR. Inst[itut] Fizicheskoi Khimii. Trudy, 1959, v. 7, p. 85-95.

DESCRIPTORS: *Electrochemistry, *Corrosion research, Resistance, Polarization, *Measuring devices (Electrical and electronic), *Electronic switches, Circuits, *Electrodes, Electric insulation, Bitumens, Soils.

The behavior of equivalent diagrams that describe different types of electrochemical systems when through these intermittent current is transmitted, is discussed. It is shown that at high resistances of media, when the current is broken, the methods for measuring the potentials previously described in the literature, cannot be used for recording the effect of parasitic capacitances of the system without introducing discharge facilities. An installation which enables one to investigate the electrochemical processes in media with high ohmic resistance or in the presence of insulating coatings on the electrodes, was worked out and constructed. Experimental investigation of the anode and cathode processes on iron in a soil with different mositure content was carried out. The investigation of the cathode behavior of a bitumen-insulated iron electrode in the electrolyte showed that this polarization method may be used to study the phenomena of metal passivity and in investigating the electrochemical properties of the oxide films on metals. (Author)

Moiseev, P. S. and Shamrai, F. I.
THE CORROSION RESISTANCE OF ALUMINUM-LITHIUM ALLOYS. 24 May 60 [9]p. (figs. omitted) 13 refs.
Order from OTS or SLA $1.10 62-18772

Trans. of [Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya] 1943, p. 410-414.

DESCRIPTORS: *Lithium alloys, *Aluminum alloys, *Corrosion-resistant alloys, *Corrosion inhibition.

Nevzorov, B. A.
THE NATURE OF OXYGEN IN LIQUID SODIUM (Priroda Kisloroda v Zhidkom Natrii). [1962] 15p. 16 refs.
Order from OTS or SLA $1.60 AEC-tr-5412

Trans. of mono. [International Atomic Energy Agency] Conference on Corrosion of Reactor Materials, Salzburg, 4-9 June 62. [Proceedings] Paper CN-13/40.

DESCRIPTORS: *Reactor materials, Corrosion, Liquid metals, *Sodium, *Oxygen, Dissociation, Electrolysis, Carbon.

It was demonstrated experimentally that electrolytic transfer of oxygen to the anode takes place in liquid sodium at 300°C. The quantity of oxygen transferred per 1 ampere-hour is constant. AT 600°C the electrolytic transfer of oxygen is higher by a factor of almost 6 than the transfer at 300°C. The assumption is made that sodium oxide dissociates partially into ions in liquid sodium and that negatively charged oxygen ions participate in the electrolytic transfer. The role played by oxygen ions in primary processes of the corrosion of metals and in the transfer of carbon in sodium is considered. (Author)

Prazak, M. and Cihal, C.
THE POTENTIOSTATIC INVESTIGATION OF THE EFFECT OF SOME ALLOYING ELEMENTS ON THE ELECTROCHEMICAL AND CORROSION PROPERTIES OF STAINLESS STEELS. [1962] 12p.
Order from ATS $14.75 ATS-67P63G

Trans. of Corrosion Science (U. S.) 1962, v. 2, p. 71-84.

DESCRIPTORS: *Stainless steel, *Corrosion, *Electrochemistry, Alloys, Potentiometers.

Rozenfel'd, I. L. and Pavlutskaya, T. I.
A NEW PRINCIPLE OF INVESTIGATION OF ATMOSPHERIC CORROSION OF METALS (Novyi Printsip Issledovaniya Atmosphernoi Korrozii Metallov). [1962] 4p.
Order from ATS $5.50 ATS-16P66R

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1953, v. 91, no. 2, p. 315-317.
Other translations are available from SLA as RT-3580 and from NLL as CTS no. 81.

DESCRIPTORS: Metals, *Corrosion research, Atmosphere.

Tomashov, N. D. and Berukshtis, G. K.
METHOD OF DETERMINATION OF THE RATE OF CORROSION PROCESSES UNDER THIN FILMS OF ELECTROLYTE (Metod Opredeleniya Skorosti Korrozionnykh Protsessov pod Tonkimi Plenkami Elektrolita) tr. by Lydia Venters. Feb 62, 9p. 7 refs.
Order from OTS or SLA $1.10 AEC-tr-5009

Trans. of [Akademiya Nauk] SSSR. Institut Fizicheskoi Khimii. Trudy, 1959, v. 7, p. 5-10.

DESCRIPTORS: *Electrochemistry, *Corrosion research, Electrolytes, Thin films, *Measuring devices (Electrical and electronic), *Batteries and components, Design, Soils, Sea water.

A new electrochemical method for determining the rate of corrosion processes from the magnitude of the corrosion current recorded by the model of a microcorrosion element was worked out. This method allows one to investigate the basic regularities of the corrosion processes in adsorption and visible films of moisture as well as in the volume of the electrolyte. This method allows one to obtain quantitative data pertaining to the effect of temperature, concentration, composition of the electrolyte and the intensity of mixing on the corrosion rate of the processes. This method may be used in the investigation of the corrosion processes under many natural conditions (as for instance, to determine the relationship between the corrosion rate and time of stay of visible moisture films on the metal upon the atmospheric corrosion in different climatic regions), for fast determination of the corrosion aggresiveness of various soils and sea water at different depths as well as for fast judgment on the protective properties of varnished coatings and lubricants. (Author)

Valkov, V. D.
AN INSTRUMENT FOR MAKING CORROSION AND ELECTROCHEMICAL MEASUREMENTS ON A ROTATING ELECTRODE UNDER IRRADIATION. [1962] [4]p. 3 refs. C. E. Trans. 2512; [DSIR] NLL M6372.
Order from OTS or SLA $1.10 62-32802

Trans. of Akad[emiya] Nauk SSSR. Inst[itut] Fiz[icheskoi] Khim[ii]. Trudy, 1959, v. 7, no. 5, p. 139-140.

DESCRIPTORS: *Measuring devices (Electrical and electronic), *Electrodes, Rotation, Corrosion, Measurement, *Electrochemistry, Metals, Alloys.

An instrument has been designed which makes it possible to study, on a rotating electrode, the electrochemical and corrosion behaviour of metals and alloys under irradiation in various media with a constant supply of oxygen, nitrogen, or other gases. In addition to the well-known advantages of using a rotating electrode, this method gives more uniform irradiation of the surface of the specimen.

Wiegand, H. and Doruk, M.
EFFECT OF CARBON AND MOLYBDENUM UPON THE FORMATION OF STRUCTURAL CONSTITUENTS, ESPECIALLY INTERMETALLIC PHASES, IN AUSTENITIC CHROMIUM NICKEL STEEL. Jan 63.
Order from BISI £5 10s BISI-3059

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 8] p. 559-566.

DESCRIPTORS: *Steel, Nickel alloys, Chromium alloys, Austenite, *Phase studies, Intermetallic compounds, *Microstructure, Molybdenum, Carbon.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 77 (PHYSICS AND MATHEMATICS SERIES). 12 Feb 63 [13]p. JPRS: 17584.
Order from OTS $0.50 63-21105

Consists of abstracts of articles from the scientific and technical journals of Czechoslovakia and East Germany.

DESCRIPTORS: *Abstracts, Literature, *East Germany, *Czechoslovakia, *Nuclear physics, *Nuclear energy, Radioactive fallout, Aerosols, Neutron flux, Cesium, Calcium, Cobalt, Manganese, Radioactive isotopes, Tracer studies, Pulse amplifiers, Reactor materials, Gamma rays, Dose rate, Difference equations Diffusion, Fast neutrons, Research reactors, Radioactivation analysis.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 83 (PHYSICS AND MATHEMATICS SERIES. 13 Feb 63 [12]p. JPRS: 17631
Order from OTS $0.50 63-21133

Consists of abstracts of Nukleonika (Poland) 1962, v. 7, no. 9, p. 539-579, 581-597; no. 10, p. 599-668.

DESCRIPTORS: *Abstracts, Literature, Poland, *Nucleonics.

APPLICATION OF TRANSIENT ELECTROCHEMICAL METHODS TO THE CHEMICAL ANALYSIS OF PRODUCTS INTENDED FOR NUCLEAR CHEMISTRY. Special (technical) rept. no. 1 on Contract 018-60-7-RDB. [1962] 37p.
Order from OTS or SLA $3.60 EURAEC-269

Trans. of a rept. from Brussels Free U. (Belgium) Feb 62.

DESCRIPTORS: *Electrochemistry, *Chemical analysis, Radiochemistry, Organic compounds, Adsorption, Potentiometers.

The adsorption of organic substances on ideally polarizable electrodes has been studied by considering cases when equilibrium is decreasing and by analysing the E(t) curves in these different cases. The case of depolarized electrodes was then examined with only one depolarizer in the solution. The advantages of the control and the use of the depolarization potential have been brought out by showing in particular how it is possible to test and to eliminate the effects of a previous parasitical discharge and also of the electro-capillary stirring of the surface of the mercury resulting from the initial potential jump. A study has also been made of the case where the depolarizer itself is adsorbed, and a method has been recommended which makes it possible to estimate the quantities adsorbed and to establish the adsorption isotherm. (Author)

APPLICATION OF TRANSIENT ELECTROCHEMICAL METHODS TO THE CHEMICAL ANALYSIS OF PRODUCTS OF INTEREST IN NUCLEAR CHEMISTRY. Quarterly rept. no. 6, 1 Oct-31 Dec 61, on Contract 018-60-76RDB. [1962] 6p.
Order from OTS or SLA $1.10 EURAEC-241

Trans. of a rept. from Brussels Free U. (Belgium) Jan 62.

DESCRIPTORS: *Electrochemistry, *Chemical analysis, Radiochemistry, Potentiometers.

Several final improvements have been made in the measuring circuit of the chronopotentiometric apparatus. Check measurements effected on the simulator circuit have shown that the accuracy on the balance tension has been brought to better than 0.5 millivolts. The electronic transfer reaction $UO_2^{++} + e \text{ --- } UO_2^{+}$ has been studied through an extensive range of current composition and density. This reaction can be considered as practically reversible, even for compositions where the deceleration effect of the double layer is rendered very important. Systematic studying of the influence of the medium on the speed of the dismutation reaction $2\,U^{V} \text{ --- } U^{VI} + U^{IV}$ has been orientated towards the examination of the acceleratory effects shown by the ions SCN^- and $SO_4^{=}$. In the case of the thiocyanate medium, the particular form of the kinetic current indicates the occurrence of specific adsorption effects. (Author) (See also EURAEC-182)

APPLICATION OF TRANSIENT ELECTROCHEMICAL METHODS TO THE CHEMICAL ANALYSIS OF SUBSTANCES OF INTEREST TO NUCLEAR CHEMISTRY, tr. by Claude Carty. Quarterly rept. no. 5, July-Sep 61, on Contract 49107-018.60.7 RDB 25. 11 Dec 61, 5p.
Order from OTS or SLA $1.10 EURAEC-182

Trans. of a rept. from Brussels Free U. (Belgium) 27 Oct 61.

DESCRIPTORS: *Electrochemistry, *Chemical analysis, Radiochemistry, Potentiometers.

In the technological field the detail improvement of the installation has been continued. Among such improvements may be listed the fact that the consumption at the entry of the monitoring circuit has been reduced to a negligible value, by modifying the diagrams of the preamplifying stages in such a manner as to reduce the consumptions of the control grids to the fullest possible extent. In addition several auxiliary circuits have been placed into service by means of which an immediate and accurate control of all critical tensions has been made possible. In the experimental field, the investigation on the influence of the prepolarization voltage in chronopotentiometric systems has been continued and supported by computations of theoretical character in order to extend its generalized character. (Author) (See also EURAEC-163)

NUCLEAR APPLICATION OF TRANSIENT ELECTROANALYTICAL METHODS. Quarterly rept. no. 4, 1 Apr-30 June 61, on [Contract 018-60-7RDB]. [1962] 6p.
Order from OTS or SLA $1.10 EURAEC-163

Trans. of rept. from Brussels Free U. (Belgium) n. d.

DESCRIPTORS: *Electrochemistry, *Chemical analysis, Radiochemistry, Potentiometers.

The work carried out covered: The implementation, perfecting and bringing into operation of the potentiostatic polarization unit; its integration in the equipment as a whole; the comparative examination of various measurement electrodes; and the experimental investigation of the prepolarization voltage on the galvanostatic method, with reference to its incidence on the uranyl ion dosimetry. (Author) (See also EURAEC-109)

Akhachinskii, V. V., Kopytin, L. M. and others.
HEATS OF FORMATION OF INTERMATALLIC COMPOUNDS OF Pu WITH Al AND Fe AND OF U WITH Fe (Teploty Obrazovaniya Intermetallicheskikh Soedinenii Plutoniya s Alyuminiem i Zhelezom i Urana s Zhelezom). [1962] 15p. 10 refs.
Order from OTS or SLA $1.60 AEC-tr-5451

Trans. of mono. Symposium on the Thermodynamics of Nuclear Materials, Vienna, 21-25 May 62. [Proceedings] paper SM-26/59.

DESCRIPTORS: *Reactor materials, Alloys, *Plutonium alloys, *Aluminum alloys, *Iron alloys, *Uranium alloys, Heat of formation, *Calorimetry, *Thermodynamics.

In the present report the results of a determination of the heats of formation of intermetallic compounds in the systems Pu-Al, Pu-Fe, and U-Fe, obtained by the calorimetry of dissolution method were generalized. The methods used to obtain the alloys, to determine their composition, and for the calorimetry were different for uranium and for plutonium. For the relation between the calory and the absolute Joule, 1 cal = 4.1840 J was used. The accuracy measure used is the probable error of the result. The impurity contents in the uranium, plutonium, and iron used in the work is listed. The aluminum was 99.9 percent pure. (Author)

Baz, A. I., Vaks, V. G., and Larkin, A. I.
ON K-MESON-HYPERON RESONANCES, tr. by M. Kassatkin. Mar 62, 38p. (foreign text included) 22 refs.
Order from OTS or SLA $3.60 UCRL Trans-807

Trans. of mono. O K-Mezon Giperonnykh Rezonasakh, Moscow, 1962, 17p.

DESCRIPTORS: *Elementary particles, Strange particles, *Mesons, *Hyperons, Pions, Protons, Nuclear reactions, Resonance.

On the basis of the data on the distribution of the cross sections $\pi^- + p \rightarrow \Sigma + K$ and $\pi^- + p \rightarrow \Lambda + K$ in the vicinity of the $\Sigma + K$ threshold, a conclusion is made that there possibly exists a level in the $\Sigma + K$ system at T= 1/2 with the binding energy E$\sim$30 Mev., which must lead to a resonance in reaction $\pi^- + p \rightarrow \Lambda + K$ below the threshold $\Sigma + K$. The paper discusses the possibility of existence of such levels in $\Lambda + K$, as well as in some other systems, and their connection with resonances in the vicinity of the corresponding thresholds. (Author)

Heusinger, H., and Rau, H.
THE EXCITATION OF LUMINESCENCE WITH BETA-RADIATION FROM TRITIUM. [Feb 63] 8p.
Order from ATS $12.00 ATS-10P65G

Trans. of Kerntechnik (West Germany) 1961, v. 3, no. 2, p. 67-70.

DESCRIPTORS: *Luminescence, Excitation, *Beta particles, *Tritium.

Ogloblin, A. A. and Chuev, V. I.
MEASURING THE SPECTRA OF TRITONS IN NUCLEAR REACTORS (Izmerenie Spektrov Tritonov v Yadernykh Reaktsiyakh). [1962] [12]p. 18 refs.
Order from OTS or SLA $1.60 AEC-tr-5225

Trans. of mono. Symposium on Tritium in the Physical and Biological Sciences, Vienna, 3-10 May 61. Proceedings, v. 1 [Vienna] 1962, p. 191-200 (STI/PUB/39).

DESCRIPTORS: Nuclear reactors, Tritium, Nuclei, *Tritons, Spectroscopy, *Nuclear reactions, Deuterons, Alpha particles, Protons, Lithium, Beryllium, *Counting methods.

A proposed method of measuring the energy and angular distributions of tritium nuclei formed in nuclear reactors is described. Around the target being bom-

barded by a beam of charged particles are arranged piles of foil, in which the escaping tritons are caught. After irradiation the tritium is separated from the foil and its activity measured by a Geiger counter. Characteristic features of the method are the complete absence of background from other charged particles and the possibility of simultaneously measuring the spectra at broad energy and angular intervals. (Author)

Pravdyuk, N. F. and Ivanov, A. N.
EFFECTS OF NEUTRON IRRADIATION ON THE ELECTRIC RESISTANCE OF CERTAIN METALS (Vliyanie Neitronnogo Oblucheniya na Elektrosoprotivlenie Nektorykh Metallov). [1962] 32p. 15 refs.
Order from OTS or SLA $3.60 AEC-tr-5263

Trans. of mono. I[nternational] A[tomic] E[nergy] A[gency] Symposium on Effects of Neutron Emission on the Electrical Resistance of Certain Metals, Venice, 7-11 May 62. [Proceedings] Paper SM-25-87.

DESCRIPTORS: Metals, *Iron, *Nickel, *Zirconium, *Titanium, *Molybdenum, *Tungsten, Electrical properties, Resistance, *Radiation effects, *Neutron bombardment, Neutron flux density, Annealing.

The report presents data on the influence of neutron irradiation in an RFT reactor on the value of the specific electric resistance of a number of transition metals; certain of these metals were irradiated both in the annealed, and in the cold-deformed states, in order to reveal any differences in the nature of the radiation damage as a function of the initial state of the metal. Data are cited on a remote measurement of the electric resistance of a number of metals during the process of irradiation in the RFT reactor. Data are also reported on the removal of radiation damages (increase in the specific electric resistance) in the investigated metals after isochronal annealing. A discussion of the results obtained is presented. (Author)

Rodier, J., Scheidhauer, J. and others.
STUDY OF DILUTION IN THE RHONE OF RADIOACTIVE EFFLUENTS FROM THE MARCOULE CENTER (1961). 35p.
Order from OTS or SLA $3.60 AEC-tr-5013

Trans. of [Commissariat à l'Énergie Atomique] (France) no. CEA-2003, n.d.

DESCRIPTORS: *Radioactive waste disposal, Plutonium, Fission products, Distribution, Statistical analysis, Rivers, Hydrogen ion concentration, Minerals, Calcium Sodium, Potassium, Alpha particles, Beta particles, Measurement.

The discharge into the Rhone of liquid radioactive waste from the Marcoule Center necessitates a large number of measurements, in particular chemical and radiochemical analysis of the waste itself and of the waters of the Rhone both above and below the point of discharge. The results thus obtained during 1960 made it possible to evaluate the total amount of active waste discharged and its dilution in the receiving medium. A statistical study of the results of the analysis of the Rhone waters shows that a satisfactory dilution of the waste occurs rapidly; the experimental results obtained with an experimental discharge of rhodamine are thus confirmed. (Author)

Shashkin, V. L.
METHODS OF ANALYSIS OF NATURAL RADIOELEMENTS. Dec 62, 141p. 126 refs.
Order from OTS $2.75 AEC-tr-5458

Trans. of mono. Metody Analiza Estestvennykh Radioaktivnykh Elementov, Moscow, 1961.

DESCRIPTORS: *Radioactive isotopes, Analysis, Radioactivity, Measurement, Radioactive series, *Uranium, *Radium, *Actinium, *Thorium, *Potassium, *Protactinium, *Polonium, *Radon, Nuclear spectroscopy, Alpha particles, Beta particles, Gamma rays, Counting methods, Chemical analysis, Rock, *Ores, Water.

Contents:
The Radioactive properties of natural radioactive elements
Methods of measuring radioactivity
Physical methods of analysis
Methods of determination of isotopes of uranium and thorium
The determination of protactinium, actinium, radium isotopes and polonium
Emanation methods of determining isotopes of radium and radon
Principles of complex radiochemical analysis

Strocchi, P. M., Noe, S., and Rebora, P.
CHEMICAL ANALYSIS IN THE QUALITY CONTROL OF REACTOR GRAPHITE, tr. by T. Rigg. 1960 [17]p. 23 refs. UKAEA IG Information Series 90 (RD/C); [DSIR NLL M. 1690].
Order from OTS or SLA $1.60 62-32403

Trans. of Energia Nucleare (Italy) 1958, v. 5, p. 815-823.

DESCRIPTORS: *Reactor moderators, *Graphite, Reactor fuels, Quality control, Impurities, Chemical analysis, Hydrogen, Boron, Nitrogen, Chlorine, Titanium, Vanadium, Rare earth elements, Thermal neutrons, Neutron absorption, *Neutron cross sections, *Reactor poisons.

The principles to be followed for the quality control of nuclear graphite by means of chemical analysis are described and the range and limits of the method as depending on the precision attainable by the analytical procedures are established. A new quantity is proposed in order to simplify the calculations of the overall absorption cross-section of the material, provided that its chemical composition is known.

T., G. and R., M.
SCIENTIFIC CONFERENCE OF THE MOSCOW ENGINEERING PHYSICS INSTITUTE FOR 1962. 25 Jan 63 [11]p. (photo. omitted). JPRS: 17300.
Order from OTS or SLA $1.10 63-15363

Trans. of #Atomnaya Energiya (USSR) 1962, v. 13, no. 6, p. 603-606.

DESCRIPTORS: *Symposia, *Scientific organizations, Scientific research, Nuclear physics, *Physics, Nuclear reactors, Antiprotons, Nuclear reactions, Ion beams, Linear accelerators, Electron accelerators, Electron beams.

Trentinian, M. de and Chesne, A.
CHEMICAL DIVISION OF ACTINIDES: TERTIARY AMINE EXTRACTION AND PURIFICATION OF PLUTONIUM, tr. by A. L. Monks. [1962] 15p. 5 refs.
Order from OTS or SLA $1.60 AEC-tr-5018

Trans. of Commissariat à l'Énergie Atomique (France) no. CEA-1426, 1960.

DESCRIPTORS: *Actinium series, *Plutonium, Purification, Separation, *Amines, Nitrates, Physical properties, *Uranium, *Fission products.

Trilaurylamine diluted with a paraffinic solvent (Dodecane) was studied as part of the research dealing with the separation and purification of plutonium. The physical properties (solubility of nitrates in the amine as a function of temperature) and the resistance to radiation of this substance were examined. The extraction characteristics of nitric solutions of plutonium, uranium, and certain fission products are given as a function of concentration of the various ions in solution and valency states. A method of plutonium purification based on these results is presented. (AEC Abstract)

Voronov, N. M., Danilin, A. S., and Kovalev, I. T.
INVESTIGATION OF EVAPORATION VELOCITY OF METAL-OXIDE SAMPLES HEATED BY ELECTRIC CURRENT (Opredelenie Skorosti Ispareniya Okislov Metallov na Obraztsakh, Nagrevaemykh Elektricheskim Tokom). [1962] [17]p. 9 refs.
Order from OTS or SLA $1.60 AEC-tr-5416

Trans. of mono. Symposium on the Thermodynamics of Nuclear Materials, Vienna, 21-25 May 62. [Proceedings] paper SM-26/59.

DESCRIPTORS: *Reactor materials, Metals, Oxides, Evaporation, Velocity, *Uranium compounds, *Zirconium compounds, *Thorium compounds, Dioxides, Vapor pressure, Heating, Electric currents, *Thermodynamics.

Using specimens of uranium dioxide, zirconium dioxide, and thorium dioxide heated with electric current, the possibility of determining the rate of evaporation of metal oxides both in vacuum and in an oxidizing medium was established. The accuracy of the determination is ±10 per cent for vacuum and ±15 per cent for air. The calculated vapor tension of uranium dioxide is two or three times lower than the most reliable literature data obtained by the effusion method. The method makes it possible to heat metal oxides to high temperatures and at the same time avoid many shortcomings inherent in other heating methods used to study the evaporability of metal oxides. It follows simultaneously from the present investigation that heating metal oxide specimens with electric current can be used successfully in many other investigations of high-temperature properties of oxides (heating for the purpose of heat treatment, melting, determination of electric resistivity, and phase transformations). (Author)

Instruments and Installations

PARTICLE ACCELERATORS: PRINCIPLES, THEORY AND DESIGN; A BIBLIOGRAPHY. 16 Jan 63 [45]p. 422 refs. AID Rept. B-63-9; AD-294 575.
Order from OTS $1.25 63-11556

DESCRIPTORS: *Bibliography, *Particle accelerators, Electrostatic accelerators, Linear accelerators, Cyclotrons, Betatrons, Synchrotrons, Synchrocyclotrons, Theory, Design.

This bibliography is intended as a guide to Soviet literature on the principles, theory, and design of particle accelerators. Literature from Communist China and other Soviet-Bloc countries is included. The bibliography has been compiled from Soviet monographs, periodical articles, newspapers, conference proceedings, and other public sources available at the Aerospace Information Division prior to May 1960.

Borisov, M. and Marinov, M.
CADMIUM-SULPHIDE CRYSTAL COUNTERS (Kristallicheskie Schetchiki iz Sul'fida Kadmiya). [1962] 17p. 9 refs.
Order from OTS or SLA $1.60 AEC-tr-5366

Trans. of mono. I[nternational] A[tomic] E[nergy] A[gency] Conference on Nuclear Electronics, Belgrade, 15-20 May 61. Proceedings, v. 1, 1962, p. 363-377 (STI/PUB 42).

DESCRIPTORS: *Radiation counters, *Crystal counters, Cadmium compounds, Sulfides, Polarization, *Alpha counters, Design.

The paper gives the results of research on polarization effects in cadmium-sulphide crystal counters. The kinematics of polarization effects and the dependence of the maximum value of the polarization potential on the working potential were studied. To eliminate the influence of polarization effects it is proposed to use a high-frequency potential instead of a constant one. The counting efficiency was compared for different crystals using constant and high-frequency potentials. Some work was done on the relation between pulse amplitude, α-particle energy and operating potential. The mechanism of pulse formation in cadmium-sulphide crystal counters was also studied. With a view to the practical application of cadmium-sulphide crystal counters, measurements were made to determine their useful life and their counting efficiency for different parts of a given crystal. Practical methods were worked out for using them as α-particle counters and in certain other types of devices. (Author)

Chizhikova, Z. A.
YIELD OF RADIOLUMINESCENCE OF ORGANIC MATTERS (Vykhod Radiolyuminestsentsii Organicheskikh Veshchestv). Nov 62, 73p. 141 refs.
Order from OTS $1.75 AEC-tr-5377

Trans. of Akademiya Nauk SSSR. Fizicheskii Institut. Trudy, 1961, v. 15, p. 178-229.

DESCRIPTORS: *Scintillation counters, Organic compounds, *Luminescence, Excitation, Quenching (Inhibition), Anthracenes, Stibenes, Benzene derivatives, Acetylene derivatives, Fluorenes, Naphthalenes, Diphenyl, Amines, Styrenes, Solvents, Gamma rays, Alpha particles, X-rays, *Counting methods.

The absolute photoluminescence yield of a number of organic crystals, used as scintillators, was measured. The absolute energy yield of the luminescence of stil-

bene crystals upon excitation by γ rays was found to be equal to 2.1%. In such solvents, the intensity of the radioluminescence is comparable with that of the Vavilov-Cherenkov radiation under the effect of Compton electrons. The absorbed portion of the Vavilov-Cherenkov radiation in the solution was used as a reference standard for determinating the efficiency of the radio-luminescence, ρ. The average value of ρ for six solutions was found to be $\rho = 3.9 \pm 0.5\%$. The α/β ratio is equal to (0.10 ± 0.01) for crystals, plastic materials and solutions. The temperature dependence of the α/β ratio for tolane crystals was also investigated. The extinction of terphenyl solutions in xylene by foreign extinguishing agents, such as carbon tetrachloride, was investigated in the case of γ and α excitation. At low terphenyl concentrations the extinction in the case of α excitation is somewhat smaller than in case of γ excitation. At high concentrations this difference is not noticed. It was concluded that the small yield of α luminescence is due to a primarily first-order extinction.

Ignat'ev, K. G., Kirpichnikov, I. V., and Sukhoruchkin, S. I.
MULTI-CHANNEL TIME-ANALYZER WITH ELECTROSTATIC MEMORY TUBE (Mnogokanal'nye Vremennye Analizatory s Pamyat'yu na Potentsialoskopakh). [1962] 8p. 4 refs.
Order from OTS or SLA $1.10 AEC tr-5407

Trans. of mono. Conference on Nuclear Electronics, Belgrade, 15-20 May 61. Proceedings, v. 2, 1962, p. 215-219 (STI/PUB-42).

DESCRIPTORS: *Neutron spectroscopy, *Pulse analyzers, *Time interval counters, Design, Memory devices, *Storage tubes.

The Academy of Sciences of the USSR has built two multi-channel time-analyzers with an LN-4 electrostatic memory tube for pulse analysis. The analyzers are at present being used for various kinds of measurements; they have the following characteristics: Number of channels -- 1024 and 2048, Channel time width -- from 0.2 μs upwards, Channel capacity -- 4096 pulses and 1024 pulses, Analyzer trigger frequency -- up to 1000 per second. Measurement results are given by the analyzers in the form of graphs and numerical data on perforated cards. (Author)

Mikhailov, V. A., Roinishvili, V. N., and Chikovani, G. E.
CONTROLLABLE SPARK CHAMBER: AN APPARATUS FOR OBSERVING THE TRACKS OF CHARGED PARTICLES (Upravlyaemaya Iskrovaya Kamera: pribor dlya Nablyudeniya Sledov Zaryazhennykh Chastits). [1962] 10p. 5 refs.
Order from OTS or SLA $1.10 AEC-tr-5417

Trans. of mono. I[nternational] A[tomic] E[nergy] A[gency] Conference on Nuclear Electronics, Belgrade, 15-20 May 61. Proceedings, v. 1, 1962, p. 353-359 (STI/PUB-42).

DESCRIPTORS: *Radiation counters, Design, Operation, Sparks, *Particle trajectories, Detection.

The authors present a new type of detector - "a spark chamber" which is similar in its principle of operation to the spark counter. Unlike the latter, the spark chamber is pulse fed. The detector is simple in design and easy to operate; it can be used for tracing particle trajectories and has a high time and space resolution. In addition it can be made to large dimensions.

Voitovetskii, V. K. and Tolmacheva, N. S.
CERIUM-ACTIVATED VITREOUS SCINTILLATORS FOR NEUTRON DETECTION (Stsintillyatsionnye Stekla, Aktivirovannye Tseriem dlya Detektirovaniya Neitronov). [1962] 7p. 6 refs.
Order from OTS or SLA $1.10 AEC-tr-5415

Trans. of mono. I[nternational] A[tomic] E[nergy] A[gency] Conference on Nuclear Electronics, Belgrade, 15-20 May 61. Proceedings, v. 1, 1962, p. 127-130 (STI/PUB 42).

DESCRIPTORS: *Neutron detectors, *Scintillation counters, Glass, *Cerium, Lithium compounds, Oxides, Silicates.

This paper gives the results of measurements on the resolving times and scintillation efficiency of cerium-activated silicate glasses. The authors show the effect of the Ce concentration on the scintillation efficiency of glass assaying $Li_2O \times 0.5\ CaO \times 0.13\ Al_2O_3 \times 4SiO_2$. The effect of temperature on efficiency was determined in the range -50°C to 50°C. It was found that throughout the entire temperature range the efficiency is constant within the limits of measurement. The paper also indicates the scintillation efficiency of glass assaying $1.5\ Li_2O \times 0.13\ Al_2O_3 \times 4\ SiO_2 \times 0.06\ CeO_2$, in which 0.5 molecules of lithium had been replaced by other alkaline or alkaline-earth elements. (Author)

Zlobinskii, Boris Mekhailovich.
SAFETY RULES FOR WORKING WITH RADIOACTIVE MATERIALS. Dec 62, 349p. 29 refs.
Order from OTS $4.50 AEC-tr-5445

Trans. of mono. Bezopasnost Rabot s Radioaktivnymi, Moscow, 1961.

DESCRIPTORS: *Radioactive isotopes, *Safety, *Health physics, Radioactive decay, *Radiation hazards, *Radiobiology, Radiation sickness, Genetics, Safety devices, *Shielding, Health physics instrumentation, *Dosimeters, *Decontamination, *Radioactive waste.

The book treats the problems of safety techniques in the use of radioactive substances in scientific research and in industry -- the biological action of ionizing radiation, the basic principles of protection, the organization of work using radioisotopes, the construction of work and auxiliary rooms, equipment for work with isotopes, protective shielding, the removal of waste products and deactivation, individual protective devices, dosimetric control, etc. The book is designed for safety technique workers, scientific and engineering-technical workers of research institutions and industrial enterprises, using radioactive substances. (Author)

ELECTRIC-SLAG-WELDING OF REACTOR STEELS. Quarterly rept. no. 2, 1 Nov-31 Dec 61, on Contract 046-61-4 RDA. [1962] [67]p.
Order from OTS or SLA $6.60 EURAEC-251

Trans. of a rept. from Schweisstechnische Lehr- und Versuchanstalt, Duisburg (West Germany) 31 Jan 62.

DESCRIPTORS: *Reactor materials, *Steel, *Electric welding, Welding, Welded joints, Welding rods, Welding fluxes, Tests.

IMPROVEMENT OF THE HEAT TRANSFER OF BOILING WATER REACTORS. Quarterly rept. no. 7 (4th quarter 1961) on Contract 058-61-7 RDF. [1962] 15p.
Order from OTS or SLA $1.60 EURAEC-231

Trans. of a rept. from Société Nationale d'Étude et de Construction de Moteurs d'Aviation, Suresnes (France) 24 Jan 62.

DESCRIPTORS: *Boiling water reactors, *Heat transfer, Tests, Reactor fuel elements, Reactor fuel rods, Hydrodynamics, Nuclear reactors.

A general survey was carried out of the technology of the fuel elements of boiling water nuclear reactors. The tests on two phase water-air discharge in a test length provided with four rods and the image of the surrounding wall or rods have started with making the measurement methods ready for service. It appeared that with this new geometry a fairly prolonged period for the establishment of the system was necessary downstream of the air injection for the measurement of the head loss and downstream of the injection of the leading bubble for the measurement of the vacuum fraction. For the thermal tests at atmospheric pressure, a redesigning was carried out comprising in particular an increase in the D. C. input from 180 to 300 kW, electric connections with the test length (12,000 Amps.), the addition of a 25 kW heater and the provision of flow meters and pressure locks with a fast response. The contractor has designed and carried out a detector of steaming crisis by means of which it will be possible to locate the point where such crisis takes place. The interest of this data became apparent during the first phase of the research. (Author)
(See also EURAEC-96)

NONDESTRUCTIVE WELD TESTING. Quarterly rept. no. 3, 1 Jan-31 Mar 62, on Contract 045/61/5 RDH. [1962] 33p.
Order from OTS or SLA $3.60 EURAEC-304

Trans. of a rept. from Röntgen Technische Dienst N.V Rotterdam (Netherlands) 27 Apr 62.

DESCRIPTORS: Sheets, Metal plates, *Steel, *Welding, *Non-destructive testing, Ultrasonics, Welded joints, Impurities, Magnetic properties, Reactor materials.

The wrought steel blocks, 100, 200 and 300 mm thick, were examined in the same way as the rolled blocks, as was described in EURAEC-244. The 100 mm thick block contains in the middle a zone of impurities, which can be used for examining the influence thereof on the measurements made on the seam in the test sample (rolled plate and wrought steel block). The 200 mm thick wrought steel block contains a large amount of impurities in the marginal zones. As the rolled plate (thickness 200 mm), with which a welded test sample must be made, also contains impurities in the marginal zone, the 200 thick wrought steel block is not suited for further investigation. The 300 mm thick block contains practically no impurities. Several photographs were made of the test block by means of a sample of cobalt 60. A thorough examination of these photographs made it clear that various precautions must be taken in order to cancel the influence of secondary radiation (stray radiations). (Author)

NONDESTRUCTIVE WELDING INVESTIGATION. Quarterly rept. no. 2, 24 Nov 61-8 Feb 62, on Contract 045/61/5 RDH. [1962] 43p.
Order from OTS or SLA $4.60 EURAEC-244

Trans. of a rept. from Röntgen Technische Dienst N.V., Rotterdam (Netherlands) 8 Feb 62.

DESCRIPTORS: Sheets, Metal plates, *Steel, *Welding, *Non-destructive testing, Ultrasonics, Welded joints, Impurities, Magnetic properties, Reactor materials.

Rolled material in thicknesses of 50, 100, 200 and 300 mm. intended for the test pieces to be welded was subjected to an extensive investigation. In addition to ultrasonic research with both straight and angular probers a magnetic investigation was also carried out on the sectional surfaces. (Author)

SOVIET EXPERIMENTAL PULSED REACTOR: REVIEW OF SOVIET LITERATURE. Rept. on AID Work Assignment no. 31. 5 Dec 62 [12]p. 4 refs. AID rept. 62-197; AD-291 909.
Order from OTS or SLA $1.60 63-13712

DESCRIPTORS: *Nuclear reactors, Test reactors, Design, Construction, Operation, Reactor lattice parameters, Reviews.

This report provides a detailed description of the proposed Soviet Experimental Pulsed Reactor using a water solution of an enriched uranium salt as fuel. Coverage includes general construction details, operating principles, and reactor parameters. The text is accompanied by schematic diagrams of the reactor and curves of reactor parameters.

SOVIET EXPERIMENTAL UF_6 REACTOR: REVIEW OF SOVIET LITERATURE. Rept. on AID Work Assignment no. 16. 18 Oct 62 [13]p. 4 refs. AID rept. 62-172 AD-288 036.
Order from OTS or SLA $1.60 63-13039

DESCRIPTORS: *Nuclear reactors, *Homogeneous reactors, Test reactors, Design, Construction, Reactor lattice parameters, Reactor control, Reactor safety systems, Uranium compounds, Fluorides, Reactor fuels.

This report provides a detailed description of the Soviet experimental reactor using a gaseous fissionable substance (UF_6). Coverage includes background information, general construction details, details of the control and safety systems, and the physics of the reactor. The presentation is accompanied by photographs and schematic diagrams of the reactor.

SWAGING OF URANIUM DIOXIDE. Quarterly rept. no. 7, 1 Jan-31 Mar 62, on Contract 059-61-7 RDI. [1962] 18p. FN-E-21.
Order from OTS or SLA $1.60 EURAEC-310

Trans. of a rept. from FIAT, S.A., Turin (Italy) 30 Apr 62.

DESCRIPTORS: *Uranium compounds, *Dioxides, Reactor fuel elements, *Reactor fuel rods, Forging, Non-destructive testing, Reactor fuel cladding, Thermal conductivity.

A gamma absorptometer for non-destructive determination of the UO_2 swaged density and uniformity of density along the rod has been designed, constructed and put into operation. The sensitivity of the apparatus is such that differences in UO_2 density as low as 0.5% T.D. can be detected and recorded. An additional series of 30 reactor length rods (20 with stainless steel clad and 10 with Zircaloy-2 clad) has been fabricated for the reproducibility and uniformity study on the vibro-swaging process previously developed. The non-destructive testing of these rods is in progress. Four series of samples have been prepared to study the influence of the diameter-to-thickness ratio for Zircaloy-2 tubing (namely, $D_o/T = 15, 25, 30, 50$). The samples were cold swaged to varying reductions in area with no intermediate annealing. As expected, tubes with higher D_o/T ratios ruptured with fewer passes through the swaging machine. No cracks or rupture of Zircaloy-2 were observed for reduction of area lower than 20%. Thermal conductivity of swaged UO_2 having a density of 90% T.D. was measured at 600°C. The value obtained (0.026 watt $cm^{-1}oC^{-1}$) is approximately 25% lower than figures reported for pellets of the same density. Hardness of cladding after swaging and roughness of inner surface of cladding in contact with swaged UO_2 have been studied. (Author) (See also EURAEC-253)

Anastasijevic, Predrag; Lolic, Branimir; and Ristic, Milorad.
DEVELOPMENT OF NUCLEAR ENERGY AND THE TASKS OF ELECTRICAL AND MACHINE BUILDING INDUSTRIES. 25 Jan 63 [10]p. 5 refs. JPRS: 17304.
Order from OTS or SLA $1.10 63-15364

Trans. of Tehnika (Yugoslavia) 1962 [v 17] no. 12, p. 2341-2344.

DESCRIPTORS: *Nuclear energy, *Nuclear power plants, Power reactors, *Electric power production, Power plants, Construction, Costs.

Rozen, A. M.
THEORY OF PULSED EXTRACTION COLUMNS. [1962] 16p. 23 refs.
Order from OTS or SLA $1.60 AEC-tr-5255

Trans. of Nauchnye Doklady Vysshei Shkoly. Energetika (USSR) 1958, no. 3, p. 173-186.

DESCRIPTORS: *Reactor fuels, Separation, Theory, *Towers (Chemistry), Pumps, Mass transfer, Hydrodynamics, *Chemical engineering.

Radioactivity

Nefedov, V. D., Ryukhin, Yu. A. and others.
A STUDY OF ISOTOPE EFFECTS IN BETA-DECAY OF NATURAL ISOTOPES OF LEAD (Izuchenie Izotopnykh Effektov pri Beta-Raspade Estestvennykh Izotopov Svintsa). [1962] [9]p. 16 refs.
Order from OTS or SLA $1.10 AEC-tr-5150

Trans. of mono. Symposium on the Chemical Effects of Nuclear Transformations, Prague, 24-27 Oct 60. Proceedings, v. 2 [Vienna] 1961, p. 149-155 (STI/PUB/34).

DESCRIPTORS: *Lead, *Radioactive decay, *Beta decay, *Decay schemes, Isotopes, Bismuth, Distribution.

A study was made of isotope effects in beta-decay of natural isotopes of lead (ThB and RaD). The isotope effects were detected and studied by observing the distribution of different isotopes of the daughter element among specific chemical forms. The initial parent substance used in the work was $PbPh_3Cl$. The daughter forms were accumulated in crystals of this compound, $BiPh_3Cl_2$ and inorganic Bi^{3+} were selected for study (the daughter forms, in which the distribution of bismuth isotopes was investigated). The results of the study of distribution of bismuth isotopes between $BiPh_3Cl_2$ and the inorganic form were obtained with the parent substance $PbPh_3Cl$ labelled with ThB, RaD and with both isotopes together, and they showed that the difference in chemical behavior of the bismuth isotopes observed in these experiments cannot be related to any other factor but the difference in the decay schemes of the parent isotopes. In the case of heavy nuclei with low-energy beta-radation one of the most important factors determining the chemical state of the daughter atoms is the magnitude of the internal conversion coefficient. The existence of daughter atoms in the form of organic derivatives depends mainly on two processes: "survival" of the parent molecules and recombination of fragments.

Shcherbakov, V.
SPECIAL RULER FOR PLOTTING THE AREAS OF RADIO-ACTIVE CONTAMINATION. 15 Nov 62, 1p. AID rept. 62-182; AD-290 815.
Order from OTS or SLA $1.10 63-13416

Abstract trans. of Voennyi Vestnik (USSR) 1962 [v. 42] no. 9, p. 116.

DESCRIPTORS: Radioactive fallout, *Radiological contamination, Contamination, *Plotters.

Tne lenght of the ruler is 70 mc, It is divided into three parts connected by hinges. The hinge pin is on the outer side, so that the ruler rests flat on the map. When folded, it can be put into the map pocket. At the right end of the ruler there is a circular protractor for measuring the direction of the average wind. The angles can be read off through a slit, without turning the ruler. In the upper right corner there is a millimeter scale for measuring distances. Below it, as well as in the upper left corner, circles of 4 to 20 mm in size are cut out for marking the contamination zones. In the lower right corner, a diagram is plotted on which the areas of the zones can be determined by their radii. Half-el-

lipses are cut out on the ruler for drawing the radioactive area on the map. The illustration shows the dimensions of their major axes in centimeters. The upper edges of the ellipses are beveled at a 30-45° angle to protect the pencil. There is a center line through the middle of the ruler, which coincides with the axis of the fallout during plotting. Reference charts can be placed in the lower left corner. The axis of the fallout is plotted using the upper or lower edges. The ruler can be made out of duralumin alloy or out of any transparent material. Figures and symbols on it are stamped or engraved.

PERSONNEL SUPPLIES AND PERSONAL EQUIPMENT

CUTAWAY SOCK TO BE WORN ON BARE FOOT OR OVER AN ORDINARY STOCKING, tr. by J. B. 15 Nov 62, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-13429

Trans. of Italian patent 341,126, cl. XX, by Societa Anonima Calzificio Carlo Doppieri, appl. 14 Mar 36, granted 12 June 36, printed Dec 36.

DESCRIPTORS: *Socks, Protective clothing.

Paradis-Camy, Joseph.
IMPERMEABLE ANKLE-BOOTS, tr. by J. B. 22 June 62 2p. (2 figs. omitted).
Order from OTS or SLA $1.10 62-25684

Trans. of French patent 1,047,146, gr. 16, cl. 4, appl. 27 Dec 1951, granted 15 July 1953, pub. 11 Dec 1953.

DESCRIPTORS: *Permeability, *Shoes, Leather, Vulcanization, Rubber.

This ankle-boot, whose upper of leather mounted on an insole of leather is attached to a sole, is characterized in that the lower portion of the upper is embedded with the sole in a mass of vulcanized rubber. (Author)

Schneider, Georges.
SPECIAL BEVELED RUBBER SOLE TREAD, tr. by P. C. C. 13 June 62, 3p. (2 figs. omitted)
Order from OTS or SLA $1.10 62-25677

Trans. of French patent 453,323, gr. 16, cl. 4, appl. 17 Jan 1913, granted 1 Apr 1913, pub. 5 June 1913.

DESCRIPTORS: *Rubber, *Shoes, Processing, Tire tubes, Wastes (Industrial), Manufacturing methods.

PHYSICS

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 67 (PHYSICS AND MATHEMATICS SERIES). 1 Feb 63 [14]p. JPRS: 17428.
Order from OTS $0.50 63-21039

Abstract trans. of Annalen der Physik (East Germany) 1962 [ser. 7] v. 10, nos. 1-4, p. 1-232.

DESCRIPTORS: *Abstracts, Literature, *East Germany, *Physics, *Mathematics, Nuclear physics, Quantum statistics.

ELECTROMAGNETIC WAVE SCATTERING AND SUPER-HIGH VACUUM VIA SEMICONDUCTORS. 8 Feb 63 [15]p. JPRS: 17532.
Order from OTS $0.50 63-21080

Trans. of Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1962, v. 7, no. 12, p. 1274-1279 and 1367-1368.

DESCRIPTORS: *Wave transmission, *Electromagnetic waves, Scattering, Surfaces, Dipole antennas, Low pressure research, *Vacuum systems, *Semiconductors, *Titanium compounds, Magnesium compounds, Oxides, *Electron bombardment

Contents:
The scattering of electromagnetic waves on uneven surfaces, by V. I. Mikhailov
Obtaining super-high vacuum by means of oxide electronic semiconductors pulverized by electron bombardment, by G. S. Mikhailov and others.

INVESTIGATIONS IN THE FIELD OF SURFACE FORCES. 15 Nov 62 [88]p. 48 refs. FTD-TT-62-429.
Order from OTS or SLA $8.10 63-13905

Unedited rough draft trans. of mono. Issledovaniya v Oblasti Poverkhnostnykh Sil: Sbornik Dokladov na Konferentsii po Poverkhnostnym Silam, Apr 60, Moscow, 1961, p. 11-16, 48-54, 83-88, 197-231.

DESCRIPTORS: Surface properties, *Polymers, Plastics, Rubber, *Bonding, Adhesion, *Luminescence, *Adhesives, Glass, Infrared spectroscopy, *Aerosols, Particles, Diffusion, Gases, Mixtures, *Clouds, Fog, Nuclei, *Counting methods, Vapors, *Cloud chambers, *Coagulation, Dynamics.

Contents:
Surface forces and their influence on the properties of heterogeneous systems, by B. V. Deryagin
Investigation of the adhesion bond of polymers by the luminescence method, by N. A. Krotova and L. P. Morozova
Application of infrared-spectroscopy methods for the study of adhesive-underlayer (polymer-glass) interaction, by N. A. Krotova and L. P. Morozova
Diffusiophoresis of aerosol particles, by B. V. Deryagin and others
On the behavior of a small aerosol particle in a non-uniformly heated mixture of gases, by S. P. Bakanov and B. V. Deryagin
Differential counter for condensation nuclei, by A. I. Storozhilova
A new method of obtaining constant and homogeneous supersaturation, by B. V. Deryagin and others
Concerning solution of the kinetic coagulation equation, by G. A. Martinov and S. P. Bakanov.

MEASUREMENT OF THE SURFACE TENSION OF CERTAIN SOLIDS AND LIQUIDS. 4 Feb 63 [87]p. 53 refs. JPRS: 17447.
Order from OTS $2.25 63-21046

Trans. of Seminar po Zharostoikim Materialam. Trudy (USSR) 1959, v. 4, p. 5-37 and 65-71.

DESCRIPTORS: *Heat resistant materials, Liquids, Solids, *Surface tension, Measurement, Chemical bonds, Heat of formation, *Phase studies, Deformation, Liquid metals, Aluminum, *Iron, *Cobalt, *Induction heating, *Thermodynamics, *Hydrostatics.

Contents:
The theoretical calculation of the surface tension and certain other characteristics of solids and liquids, by M. Yu. Bal'shin
The sessile-drop method of measuring the surface tension of metals of the iron family, by V. N. Eremenko and others.

TRANSACTIONS OF THE INSTITUTE OF THE PHYSICS OF METALS, 1958, NO. 20. Feb 62, 479p.
Order from OTS $5.50 AEC-tr-4513

Trans. of Akademiya Nauk SSSR. Institut Fiziki Metallov, Sverdlovsk. Trudy, 1958, no. 20, p. 5-400.
##Other translations of p. 5-11, 111-124, 265-282 are available elsewhere.

DESCRIPTORS: *Metals, *Physics, *Solids, Quantum mechanics, *Transition elements, Oxides, Lattices, Optical properties, *Magnetostriction, *Ferromagnetism, Antiferromagnetism, Electrical conductance, *Ferromagnetic materials, Magnetic properties, *Crystal structure, Iron, Silicon compounds, *Magnetic materials, Sensitivity, *Steel, Electrical industry, Mechanical properties, *X-ray spectroscopy, *Solid state physics, Microstructure, Phase transitions, Diffusion, Plasticity, Deformation, Microanalysis, *Hydrostatic pressure, Alloys, Decomposition, Heat treatment, Kinetic reactions, Austenite, Cast steel, Hardening, Induction heating, Bibliography.

Contents:
##Accomplishments and prospects of scientific activity at the Institute of the Physics of Metals, by M. N. Mikheev
Certain problems of the quantum theory of solids, by S.V. Vonsovskii
Statistical theory of binding forces in oxides of transition metals with cubic lattice, by A. A. Orlov and A. N. Men'
Quantum theory of optical properties of metals, by A. V. Sokolov
Certain problems in the theory of mechanical, magnetic thermal, magnetomechanical, thermomagnetic, and thermoelastic properties of a magnetoelastic medium, by K. B. Vlasov
Certain problems in quantum-mechanical and phenomenological theory of ferromagnetism, antiferromagnetism, and ferrimagnetism, by K. B. Vlasov
Anomalies of electric conductivity in antiferromagnets near the Neel point, by Yu. P. Irkhin
Phenomenological theory of ferromagnetic phenomena, by E. A. Turov and V. G. Shavrov
##On the magnetic structure of high-coercive-force ferromagnets, by Ya. S. Shur
Magnetic structure of crystals of silicon iron in the state of remanent magnetization, by I. E. Startseva and Ya. S. Shur
Connection between magnetic properties and sensitivity of magnetostriction receivers, by Ya. S. Shur and others
Methods of control of magnetic properties of electrotechnical sheet steel, by R. I. Yanus
Comparative tests of ferro-probes with longitudinal and transverse excitation, by S. A. Ahturkin
Magnetic control of the structure and of mechanical properties of steel products, by M. M. Mikheev
Application of X-ray spectroscopy to investigation of the energy spectrum of electrons and interatomic binding forces in solids, by S. A. Nemnonov
Method of absorption of X-rays in the solution of certain problems in solid state physics, by V. A. Trapeznikov
Internal adsorption in solid solutions, by V. I. Arkharov
Manifestation of the physical mechanism of reaction diffusion in the structural picture of layers of the reaction products, by V. I. Arkharov
Investigation of the laws of plastic deformation and breakdown, by V. A. Pavlov
##Microscopic investigation of the mechanism of plastic deformation of metals and alloys, by E.S. Yakovleva
##Effect of high pressure on certain physical properties of solids, by K. P. Rodionov
Investigation of decomposition in metallic supersaturated solid solutions, by N. N. Buinov
Structural mechanism of phase recrystallization during the heating of steel, by V. D. Sadovskii
Influence of prior heat treatment of steel on the kinetics of transformations of supercooled austenite, by V. G. Gorbach and V. D. Sadovskii
Improvement in the structure and in the fracture of cast alloyed steel by heat treatment, by N. A. Kompaneitsev and V. D. Sadovskii
Strengthening of metastable austenitic alloys by phase cold hardening, by K. A. Melyshev and others
Production of high heating rates for the investigation of electric heat treatment and for other purposes, by N. M. Rodigin
Bibliography of works of the staff members of the Institute of the Physics of Metals, Ural Branch, Academy of Sciences USSR for 1932-56.

Fabrikant, V. A., Vudynskii, M. M., and Butaeva, F. A.
METHOD OF AMPLIFYING ELECTROMAGNETIC RADIATIONS OF ULTRAVIOLET, VISIBLE, INFRARED AND RADIO WAVE RANGE RADIATIONS. 29 Nov 62 [4]p. FTD-TT-62-1427.
Order from OTS or SLA $1.10 63-15292

Unedited rough draft trans. of Russian patent 123209 (576749/26) [Byulleten' Izobretenii] (USSR) 1959, no. 20 [p. 29]

DESCRIPTORS: *Electromagnetic waves, *Ultraviolet radiation, *Light, *Infrared radiation, *Radio waves, Amplifiers.

In method given the amplified radiation is passed through a medium in which an excessive atom density, as compared with the balanced density, is created in other particles or in their systems on the top energetic levels corresponding to excited states. This may be accomplished by using auxiliary radiation or other means.

Schultze, K.
THE BEHAVIOR OF DIFFERENT LIQUIDS IN ELECTROSTATIC ATOMIZATION. [Feb 63] 10p.
Order from ATS $14.00 ATS-30P65G

Trans. of Z[eitschrift für] Angew[andte] Phys[ik] (West Germany) 1961, v. 13, no. 1, p. 11-16.

DESCRIPTORS: Liquids, Behavior, *Atomization, *Electrostatics.

Matorin, P. V.
ON THE COMPRESSIBILITY OF LIQUIDS AND SOLIDS AT VERY HIGH PRESSURES, tr. by Stephen G. Brush. Mar 62, 5p. 4 refs.
Order from OTS or SLA $1.10 UCRL Trans-794(L

Trans. of Nauchnye Doklady Vysshei Shkoly. Fiziko-matematicheskie Nauki (USSR) 1959, no. 3, p. 141-144.

DESCRIPTORS: *Liquids, *Solids, *Compressive properties, Pressure, High pressure research.

Slyusarev, G. G.
THE POSSIBLE AND THE IMPOSSIBLE IN OPTICS, 3d ED. REV., tr. by H. O' C. 18 Dec 62, 131p. (figs. omitted). I-3073.
Order from OTS $2.75 63-11562

Trans. of mono. O Vozmozhnom i Nevozmozhnom v Optike, 3d ed. rev, Moscow, 1960.
An unedited rough draft trans. is available from OTS or SLA $12.50 as 62-32281, FTD-TT-62-175, 16 July 62 [172]p.

DESCRIPTORS: *Optics, *Optical systems, Resolution, Optical images, Telescopes, Microscopes, Microscopy, Combustion, *Light, Electron beams, X-rays, Amplitude modulation, Wave characteristics, Limiters, Physical properties.

Acoustics

Andreev, N. N.
ON STANDING ACOUSTIC WAVES OF LARGE AMPLITUDE. [1961] 3p. 5 refs. MDF A-149.
Order from OTS $0.50 62-11348

Trans. of mono. [Issledovaniya po Eksperimental'noi i Teoreticheskoi Fizike] (Investigations on Experimental and Theoretical Physics) Moscow, 1959, p. 53-55.

DESCRIPTORS: *Acoustics, *Sounds, Propagation, Standing-wave ratios, Harmonic analysis.

Gershman, S. G., Smirnov, A. I., and Tuzhilkin, Yu.
A TRANSPOSITION DEVICE FOR OBTAINING THE CORRELATION FUNCTION OF INFRA-SOUND PROCESSES. [1962] [7]p. 3 refs. [DSIR] NLL M.6313.
Order from OTS or SLA $1.10 62-25951

Trans. of #Akusticheskii Zhurnal (USSR) 1961, v. 7, no. 4 p. 415-420.

DESCRIPTORS: *Acoustics, *Sound signals, Low frequency, Electronic equipment, Magnetic recording systems, Statistical functions.

A description is given of a device which will transpose infra-sound signals to the frequency range of a sound correlometer. The correlation functions of initial and transposed processes are connected by simple relationships. (Author)

Oshchepkov, P. K., Rozenberg, L. D., and Semennikov, Yu. B.
ELECTRONIC ACOUSTIC CONVERTER FOR AUDIO IMAGE VISUALIZATION [Elektronno-Akusticheskii Prebrazovatel' dlya Vizualizatsii Zvukovykh Izobrazhenii]. [1961] 5p. 6 refs. MDF O-102.
Order from OTS $0.50 62-11616

Trans. of #Akusticheskii Zhurnal (USSR) 1955, v. 1, no. 4, p. 348-351.

DESCRIPTORS: *Electroacoustic transducers, *Piezoelectric transducers, Transducers (Acoustic), Design, Operation, Auditory signals, Images, Visibility.

A high sensitivity electronic-acoustic converter with a receiver of barium titanate ceramic is described. Its threshold of operation in the low megacycle frequency range is $3 \cdot 10^{-9}$ volts per sq. cm. and its sensitivity is $2 \cdot 10^{-8}$ volts per bar. The converter is linear in the intensity interval investigated ($3 \cdot 10^{-9}$-$3 \cdot 10^{-3}$ volts per sq. cm.). (Author)

Rimskii-Korsakov, A. V.
NONLINEAR DISTORTION OF NONPERIODIC SIGNALS IN ELECTRO-ACOUSTIC CANAL [Nelineinye Iskazheniya Neperiodicheskogo Signala v Elektroakusticheskom Trakte]. [1961] 9p. 3 refs. MDF R-103.
Order from OTS $0.50 62-11634

Trans. of #Akusticheskii Zhurnal (USSR) 1955, v. 1, no. 2, p. 165-170.

DESCRIPTORS: *Electroacoustic transducers, Transducers (Acoustic), *Auditory signals, Signals, Transmission, Distortion, Correlation techniques.

In order to estimate, approximately, nonlinear distortion in an electroacoustic canal, it is proposed to consider the transmitted signal as a stationary random process and to calculate its spectral density at the output as the spectral density at the input and the nonlinearity characteristic of the canal. The nonlinear transformation of the spectrum is analyzed when the nonlinearity characteristic is approximated by an exponential polynomial. In the particular cases of 'rectangular' and 'bell-shaped' spectra, expressions are given of the spectral density of products of the second and third orders and second to fifth orders, respectively. (Author)

Electricity and Magnetism

MAGNETOCRYSTALLINE ANISOTROPY OF GARNETS AND ORTHOFERRITES: ANNOTATED BIBLIOGRAPHY BASED ON SOVIET OPEN SOURCE MATERIALS 1959-JUNE 62 (PRELIMINARY). Prepared in response to AID Work Assignment no. 43. 13 Nov 62 [24]p. 68 refs. AID rept. 62-188; AD-290 814.
Order from OTS or SLA $2.60 63-13418

DESCRIPTORS: *Bibliography, Abstracts, *Garnet, *Ferrites, Ferromagnetic materials, Magnetic properties, *Anisotropy, Symmetry (Crystallography).

The entries in the bibliography arranged alphabetically by author.

Aleksandrov, G. N.
CALCULATION OF ALTERNATING CURRENT CORONA CHARACTERISTICS, tr. by Helen Basil. Aug 62, 19p. 5 refs.
Order from OTS or SLA $1.60 AEC-tr-5355

Trans. of Zhurnal Tekhnicheskoi Fiziki (USSR) 1955, v. 25, no. 10, p. 1804-1816.

DESCRIPTORS: Alternating current, *Electrical corona, Voltage, Mathematical analysis.

A method is described for the calculation of A. C. corona characteristics, using an arbitrary voltage curve which is applicable to various corona systems, including the three-phase system. Calculated results are compared to experimental data. (Author)

Braginski, Aleksander.
MAGNETIC MATERIALS. 31 Oct 60, 55p. 28 refs. USASIA: H-6801/60; JPRS: R-1211-D.
Available from OTS on loan 60-31876

Trans. of Elektronika (Poland) 1958, no. 1/2, p. 3-41.

DESCRIPTORS: *Electronic equipment, *Magnetic materials, Magnets, Metals, Oxides, Alloys, Powder metals, Ferrites.

The article contains a survey of the properties of magnetic materials used in the Polish communications industry, and a discussion of the development trends in the production of these materials. The standards currently in force and requirements imposed upon Polish-made magnetic products are also given. (Author)

Khlystov, A. S., Zhilyakov, S. M., and Petrakovskii, G. A.
THE MAGNETIC CHARACTERISTICS OF NICKEL CHROMIUM FERRITES. [1960] 3p. 3 refs. MDF K219
Order from OTS $0.50 62-11455

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avadenii]. Fizika (USSR) 1959, no. 6, p. 168-169.

DESCRIPTORS: Nickel, Chromium, *Ferrites, Ferromagnetic materials, Magnetic properties.

The introduction of magnetic chromium ions decreases the saturation magnetization of the resulting ferrite. Magnetic measurements show that in the region $0.4 < a < 0.8$ it is possible to obtain ferrites with a relatively high Curie point T_c and small saturation magnetization.

Rode, V. E.
SATURATION MAGNETIZATION OF FERROMAGNETIC ALLOYS WITH CURIE TEMPERATURES NEAR 0°K. [1960] 2p. 2 refs. MDF R-121.
Order from OTS $0.50 62-11580

Trans. of N[auchnye] D[oklady] V[ysshei] Sh[koly]. Fiz[iko]-mate[maticheskie] Nauk[i] (USSR) 1959, no. 2, p. 158-159.

DESCRIPTORS: *Ferromagnetic materials, Alloys, *Copper alloys, *Nickel alloys, Magnetic properties, Temperature, Low temperature research.

Shul'ga, N. G.
SEARCH FOR METHODS TO RAISE THE MAGNETIC PROPERTIES OF HIGHLY-COERCIVE MAGNETIC ALLOYS. [1960] 10p. 9 refs. MDF S-172.
Order from OTS $0.50 62-11293

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Energ[etika] i Avto[matika] 1960, no. 1, p. 127-133.

DESCRIPTORS: *Magnetic alloys, Alloys, Production, Heat treatment, *Magnetic properties.

Sinyakov, E. V., Avramenko, V. P. and others.
INVESTIGATION OF THE MAGNETIC CHARACTERISTICS OF CERTAIN MIXED FERRITES. [1960] 8p. 12 refs. MDF S-173.
Order from OTS $0.50 62-11275

Trans. of Izvestiya V[ysshikh U[chebnykh] Z[avedenii]. Fizika (USSR) 1960, no. 1, p. 80-86.

DESCRIPTORS: *Ferrites, Ferromagnetic materials, *Magnetic properties, Permeability.

Smol'kov, N. A. and Dai, Do-shen.
CERTAIN PROPERTIES OF YTTRIUM AND GADOLINIUM GARNET FERRITES. [1960] 8p. 23 refs. MDF S-166.
Order from OTS $0.50 62-11285

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avadenii]. Fizika (USSR) 1959, no. 6, p. 145-151.

DESCRIPTORS: *Yttrium, *Gadolinium, Garnet, *Ferrites, *Magnetic properties, Temperature, High frequency, Permeability, Dielectric properties, Tensor analysis.

Results are given of a study of the temperature dependence of the static magnetic characteristics and high frequency properties of yttrium and gadolinium garnet ferrites. The tensor components of the magnetic permeability, effective permeability, and the complex dielectric permeability have been determined at a frequency of 9370 mcps.

Suchkov, A. I.
TEMPERATURE DEPENDENCE OF THE MAGNETIC PROPERTIES OF NICKEL-ZINC AND COPPER-ZINC FERRITES [Temperaturnaya Zavisimost' Magnitnykh Svoistv Nikel'-tsinkovykh i Medno-Tsinkovykh Ferritov]. [1961] 7p. 7 refs. MDF S-122.
Order from OTS or SLA $1.10 62-23206

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1954, v. 24, no. 9, p. 1579-1583.

DESCRIPTORS: *Ferrites, Nickel alloys, Zinc alloys, Copper alloys, Magnetic properties, Temperature.

Experimental investigations are cited of the fundamental magnetic characteristics of a number of ferrites depending on the temperature. It is shown that the temperature dependence of the magnetic properties of ferrites and of metal ferromagnetics is subject to the

same regularity. The investigations conducted are of importance to the practical use of ferrites in engineering. (Author)

Widmann, Helmut.
ON THE PRODUCTION OF FERRITES, PT. I. [1962] [18]p. 77 refs.
Order from SLA $1.60 62-18565

Trans. of Glas-Email-Keramo-Technik (West Germany) 1961 [v. 12] no. 9, p. 322-327.

DESCRIPTORS: *Ferrites, Production, Ferromagnetic materials, Ceramic materials, Ferrite cores, Permeability, High frequency, Low temperature research, Hysteresis.

Widmann, Helmut.
ON THE PRODUCTION OF FERRITES, PT. II. [1962] [13]p. 81 refs.
Order from SLA $1.60 62-18564

Trans. of Glas-Email-Keramo-Technik (West Germany) 1961, [v. 12] no. 10, p. 369-373.

DESCRIPTORS: *Ferrites, Production, Ferrite cores, Permeability, Low temperature research, Hysteresis, Magnetostriction, Ferromagnetic materials.

Electronics

Arifov, U. A., Ayukhanov, A. Kh., and Starodubtseva, S. V.
METHOD FOR INVESTIGATING THE SECONDARY EMISSION UPON BOMBARDMENT OF THE CONDUCTORS WITH IONS (O Metodike Issledovaniya Vtorichnoi Emissii pri Bombardirovke Provodnikov Ionami) tr. by Lydia Venters. Apr 62, 13p. 4 refs.
Order from OTS or SLA $1.60 AEC-tr-5066

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1954, v. 25, no. 6, p. 714-722.

DESCRIPTORS: *Ion bombardment, Ion beams, *Secondary emission, Measurement, Targets, Measuring devices (Electrical and electronic), *Oscillographs, Modulation, Circuits.

The deficiencies of the present methods for investigating the secondary emission under the effect of the ionic impact against the target, are discussed. Oscillographic methods are suggested which enable one to carry out measurements under pure experimental conditions. It is shown that the method of double modulation allows one to separate the proper secondary emission from the accompanying surface ionization. (Author)

Korobeinikov, V. P. and Ryazanov, E. V.
ON THE SOLUTIONS OF THE MAGNETOHYDRODYNAMIC EQUATIONS FOR A ZERO TEMPERATURE GRADIENT. [1959] 3p. 2 refs. MDF K-190.
Order from OTS $0.50 62-11276

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 124, no. 1, p. 51-52.

DESCRIPTORS: *Magnetohydrodynamics, Plasma physics, Temperature, Equations of motion.

Consideration is given to the one-dimensional motion of an electrically conducting perfect gas with cylindrical and plane waves. The gas conductivity is infinite viscosity is not taken into account. The magnetic field is perpendicular to the gas particle trajectories.

Mercier, Claude.
A NECESSARY HYDROMAGNETIC STABILITY CRITERION FOR A PLASMA WITH REVOLUTION SYMMETRY (Un Critère Nécessaire de Stabilité Hydromagnétique pour un Plasma en Symétrie de Révolution). [1962] [21]p. 3 refs.
Order from OTS or SLA $2.60 AEC-tr-5033

Trans. of Commissariat à l'Énergie Atomique (France) no. CEA-1863, 1961 (also pub. in Nuclear Fusion (Austria) 1960 [v. 1] no. 1, p. 47-53.

DESCRIPTORS: *Plasma physics, Stability, Plasma oscillation, *Magnetohydrodynamics, Rotation, Cylindrical bodies.

A stability criterion is calculated for a plasma with revolution symmetry. It corresponds to localized displacements in the neighborhood of constant pressure surfaces on which the magnetic lines of forces are closed. This criterion reduces to that of Suydam in the case of cylindrical symmetry. (Author)

Saltanov, N. V. and Tkalich, V. S.
CONCERNING RIEMANN WAVES. 9 Apr 62 [16]p. 15 refs. FTD-TT-62-354.
Order from OTS or SLA $1.60 62-25547

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1961, no. 6, p. 26-32.

DESCRIPTORS: *Magnetohydrodynamics, Entropy, Density, Equations of motion, Differential equations, Plasma physics.

Riemann waves are investigated in magnetohydrodynamics.

Silin, V. P.
THEORY OF TRANSFER PROCESSES IN A PLASMA ACROSS A MAGNETIC FIELD, tr. by Sergey Shewchuck. Sep 62 12p. 4 refs.
Order from OTS or SLA $1.60 UCRL Trans-869 (L)

Trans. of Akademiya Nauk SSSR. Fizicheskii Institut. Rept- A-83, 1962.

DESCRIPTORS: *Plasma physics, Magnetic fields, Particles, Electrons, Ions, Oscillation, Theory.

A theory is described for the transfer phenomena in a plasma across a constant magnetic field. An important new moment is the calculation of the interaction of

plasma particles with longitudinal oscillation. It is shown that with fairly large ratios of the electron and ion temperatures, the effect of the particle interaction with the plasma oscillations leads to a substantial change of form of the transfer coefficients. Conditions of applicability are developed which boil down, first, to a feasibility of using the excitation theory with respect to the parameter defining the quantity of interaction of the plasma particles; second, to a limitation by not very large magnetic fields which factually do not affect the interaction act; and, third, to a general condition of resolution according to reciprocal powers of the magnetic field, which corresponds to smallness of collision frequency in comparison with the Larmor frequency. (Author)

Sinel'nikov, K. D. and Ivanov, V. E.
MAGNETRON LENSES (Magnetronnye Linzy). [1961] [12]p. (foreign text included) 2 refs.
Order from OTS or SLA $1.60 UCRL Trans-600(L)

Trans. of mono. Trudy Sessii Akademii Nauk Ukrainskoi SSR po Mirnomu Ispol'zovanniyu Atomnoi Energii, Kiev, 1958, p. 50-53.

DESCRIPTORS: *Magnetrons, *Lenses, *Electron lenses, Focusing, Ion beams, Electron tubes, Election optics.

The negative volumetric charge which is formed in the magnetron with a cylindrical anode and a coaxial loop like cathode exerts a focusing influence on positive ions. Focal length of magnetron lens varies linearly with the energy of particles in the beam. It was established by probing the volumetric charge by means of narrow ion beams that the density of the volumetric charge is distributed evenly when the magnetic fields are above the critical value and that the intensity of electric field increases linearly toward the anode. (Author)

Molecular Physics and Spectroscopy

Dukel'skii, V. M. and Zandberg, E. Ya.
DISSOCIATION OF MOLECULAR NEGATIVE IONS IN COLLISION WITH GAS ATOMS, tr. by Donald C. Rich and George F. Hill. 7 May 62 [8]p. 4 refs. [AMC](Redstone) Trans-nr-20-62.
Order from OTS or SLA $1.10 62-24800

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 99, no. 6, p. 947-950.

DESCRIPTORS: Molecules, Ions, *Tellurium, *Antimony, *Bismuth, *Sodium compounds, Iodides, Dissociation, Energy, Gases, Atoms, Helium, Argon.

Dukelskii, V. M. and Zandberg, E. Ya.
NEGATIVE IONS OF ARSENIC, PHOSPHORUS, SULFUR AND THALLIUM, tr. by George F. Hill. 4 May 62 [7]p. 9 refs. [AMC] (Redstone) Trans-nr-21-62.
Order from OTS or SLA $1.10 62-24497

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 86, no. 2, p. 263-265.

DESCRIPTORS: Ions, *Arsenic, *Phosphorus, *Sulfur, *Thallium compounds, Halides, Mass spectroscopy, Gas discharges, Nitrogen, Ammonia.

As part of a study of the capability of atoms and molecules to add an electron and be changed into free negative ions, an investigation was made of the composition of ions forming in a gas discharge in nitrogen and ammonia, and also in the vapors of arsenic, phosphorus, sulfur and of the haloid salts of thallium.

Ellyashevich, M. A.
THE ZEEMAN PHENOMENON AND MAGNETIC RESONANCE. 31 Jan 63 [81]p. 34 refs. JPRS: 17398.
Order from OTS $2.00 63-21029

Trans. of mono. Atomnaya i Molekulyarnaya Spektroskopiya (Atomic and Molecular Spectroscopy) Moscow, 1962, chap. 14, p. 367-408.

DESCRIPTORS: *Zeeman effect, *Magnetic fields, *Nuclear resonance, Resonance absorption, Nuclear moments, *Atomic spectrum, *Atomic energy levels, Paramagnetic resonance, Quantum mechanics, Molecular rotation, Spectrographic analysis

Ketelaar, J. A. A., Fahrenfort, J. and others.
REPORT ON A GROUP TEST OF PHOTOELECTRIC SPECTROPHOTOMETERS. [Feb 63] 12p.
Order from ATS $12.25 ATS-39P66DU

Trans. of Chem[isch] Weekblad (Netherlands) 1955, v. 51, no. 12, p. 211-219.

DESCRIPTORS: *Spectrophotometers, Photoelectric effect, Tests.

Osipov, D. I.
PRESERVATION OF THE MAXWELLIAN DISTRIBUTION FORM IN A RELAXING GAS (O Sokhranenii Formy Maksvellovskogo Raspredeleniya v Relaksiruyushchem Gaze) tr. by Andre L. Brichant. 30 Oct 61 [6]p. 3 refs. NASA TT F-8173.
Order from OTS or SLA $1.10 62-33206

Trans. of Moscow U. Vestnik. [Seriya 3: Fizika, Astronomiya] (USSR) 1961 [v. 16] no. 1, p. 13-15.

DESCRIPTORS: *Gases, Electrons, *Relaxation time, Thermodynamics, Statistical functions, Differential equations, Fluid dynamics, Velocity.

The process of Maxwellian equilibrium settling in a light gas surrounded by an atmosphere of heavy gas is being investigated. It is assumed that the interaction forces are inversely proportional to the fifth power of the distance. It is shown that the initial light gas distribution being Maxwellian (with temperature differing from that of a heavy gas), the Maxwellian form of distribution in that gas shall be preserved in the equilibrium settling process. Only the temperature will change. The question of extending this result to other laws of interaction is also examined. (Author)

Sayasov, Yu. S.
ON THE PROBABILITY OF ELECTRON CAPTURE BY NEUTRAL ATOMS IN TRIPLE COLLISIONS, tr. by George N. Kasachkoff and Donald C. Rich. 12 Apr 62 [6]p. 6 refs. [AMC] (Redstone) Trans-nr 17-62.
Order from OTS or SLA $1.10 62-24751

Trans. of [Akademiya Nauk SSSR. Doklady, 1957, v. 113, no. 3 [p. 548-549].

DESCRIPTORS: Atoms, Molecules, *Electron capture, Probability, *Quantum statistics, Hydrogen, Ion beams.

Solid State Physi

CRYSTAL STRUCTURE RESEARCH. 7 Feb 63 [38]p. 31 refs. JPRS: 17529.
Order from OTS $1.00 63-21077

Trans. of Issledovaniya po Zharoprochnym Splavam (USSR) 1960, v. 6, p. 120-129 and 251-258.

DESCRIPTORS: *Metallic crystals, Crystal structure, *Nickel alloys, Molybdenum alloys, *Iron alloys, Atoms, Diffusion, *Crystal lattice defects, *Chromium, Density, X-ray diffraction analysis, Electrical conductance, Heat treatment.

Contents:
On the effect of unstable defects of crystal structure on the mobility of atoms in nickel and iron alloys, by I. Ya. Dekhtyar and V. S. Mikhalenkov
Study of defects in the crystal structure of chromium, by S. D. Gertsriken and others.

SEMICONDUCTING DIAMONDS: ANNOTATED BIBLIOGRAPHY BASED ON SOVIET OPEN-SOURCE MATERIALS 1959-62 (PRELIMINARY). Prepared in response to AID Work Assignment no. 43. 2 Nov 62 [8]p. 20 refs. AID Rept. 62-180; AD-288 038.
Order from OTS or SLA $1.10 63-13041

DESCRIPTORS: *Bibliography, *Semiconductors, *Diamonds.

The 20 entries are arranged alphabetically by author.

SOVIET RESEARCH IN RARE METAL INDUSTRY. 14 Feb 63 [29]p. 75 refs. JPRS: 17638.
Order from OTS $0.75 63-21136

Trans. of #Zavodskaya Laboratoriya (USSR) 1962 [v. 28] no. 4, p. 450-462.

DESCRIPTORS: *Single crystals, *Silicon, *Crystal lattice defects, Test methods, Microscopy, Interferometers, Electron microscopy, Diffraction analysis, X-ray spectroscopy.

Contents:
On a method of exposing dislocations in silicon monocrystals, by M. G. Mil'vidskii and L. V. Lainer
Methods of exposing dislocations in crystals, by I. A. Oding and E. S. Kosyakina.

Boer, K. W., and Kummel, U.
NON-CONTACTING ELECTRICAL EXCITATION OF ELECTRONS IN SINGLE-CRYSTAL CADMIUM SULFIDE. [Feb 63] 3p.
Order from ATS $3.75 ATS-26P66G

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1958, v. 13a [no. 8] p. 698-699.

DESCRIPTORS: Single crystals, *Cadmium compounds, Sulfides, *Electrons, Excitation.

Broser, I., and Warminsky, R.
ELECTRICAL PROPERTIES OF CADMIUM SULFIDE CRYSTALS THAT ARE DEPENDENT ON THE ARRANGEMENT OF THE ELECTRODES. [Feb 63] 3p.
Order from ATS $5.00 ATS-27P66G

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1950, v. 5a, p. 62-63.

DESCRIPTORS: Crystals, *Cadmium compounds, Sulfides, Electrical properties, Electrodes.

Fassbender, J.
THE PHOTOELECTRIC PROPERTIES OF SINGLE CRYSTALS OF CADMIUM SULFIDE. [Feb 63] 17p.
Order from ATS $23.50 ATS-28P66G

Trans. of Annalen der Physik (East Germany) 1949, ser. 6, v. 5, p. 33-50.

DESCRIPTORS: *Single crystals, *Cadmium compounds, Sulfides, *Photoelectric effect.

Grum-Grzhimailo, S. V.
PROPERTIES OF ISOMORPHIC MIXTURES OF Al_2O_3 - Cr_2O_3, tr. by B. W. Kuvshinoff. 18 Sep 62, 12p. 27 refs. APL/JHU TG 230-T332.
Order from OTS $0.50 62-11796

Trans. of Akademiya Nauk SSSR. Institut Kristallografii. Trudy, 1953, v. 8, p. 27-34.

DESCRIPTORS: *Corundum, *Ruby, Synthetic stones, *Aluminum compounds, *Chromium compounds, Oxides Crystal structure, Lattices, Melting, Refractive index, Absorption spectrum, Luminescence.

This paper includes a summary of various constants for Al_2O_3 - Cr_2O_3 polycrystals containing large quantities of chromium. Also, some data are given for ruby monocrystals containing no more than 3% Cr_2O_3.

Henkel, H.-J.
AGING EFFECTS IN GaAs TUNNEL DIODES. [1962] 4p. 3 refs.
Available on loan from SLA 63-10731

Trans. of Z[eitschrift] f[ur] Naturforschung (West Germany) 1962, v. 17a, no. 4, p. 358-360.

DESCRIPTORS: *Semiconductor devices, *Transistors, Diodes (Semiconductor), *Tunnel diodes, *Gallium compounds, *Arsenides, Aging, Electrical properties, Impurities, Tin, Copper, Zinc.

Kiv, A. E.
ACTIVATION MECHANISM OF CdS SINGLE CRYSTALS IN THE PRESENCE OF LOCAL X-IRRADIATION. 20 Sep 62 [11]p. 9 refs. FTD-TT-62-885; AD-287 674.
Order from OTS or SLA $1.60 63-13595

Unedited rough draft trans. of mono. Nekotorye Voprosy Prikladnoi Fiziki [Some Problems in Applied Physics] Tashkent, 1961, p. 86-93.

DESCRIPTORS: *Cadmium compounds, *Sulfides, *Single crystals, *X-rays, Photoconductivity, Photoelectrons, Catalysts, Lattices, Diffusion, Semiconductors, Heat treatment, Theory, Radiation effects.

Levshin, V. L., Antonov-Romanovskii, V. V. and others.
STUDY OF ALKALINE-EARTH PHOSPHORS WHICH HAVE HIGH SENSITIVITY TO INFRA-RED RAYS (Issledovanie Shchelochno-Zemel'nykh Fosforov Obladayuschikh Vysokoi Chuvstvitel'nostvyu k Infrakrâsnym Luchâm) tr. by Sergey Shewchuck. Aug 62, 38p. (foreign text included) 21 refs.
Order from OTS or SLA $3.60 UCRL Trans-856 (L)

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1947, v. 17, no. 11, p. 949-963.

DESCRIPTORS: *Phosphors, *Alkaline earth compounds, *Calcium compounds, *Strontium compounds, Sulfides, Sensitivity, *Cerium, *Europium, *Samarium, *Infrared radiation, Spectrographic analysis.

A new type of alkaline-earth phosphors was obtained which possessed a large accumulation capacity and sensitivity to infrared rays. The properties of these phosphors studied were the absorption and emission spectra, the flash output in relation to the infrared rays, the accumulation capacity, etc. The role of the main component parts of the phosphors was established. The emission and absorption spectra were determined by the first activator: Ce or Eu. The position of the spectrum was also dependent on the basic substance. The second activator, Sm, conditions the high sensitivity of the phosphors to infrared rays. On the basis of the experimental results obtained the mechanism of lumination of the phosphors is discussed.

Lutz, G.
INVESTIGATION OF THE STRUCTURE OF Ba $(NO_3)_2$ USING NEUTRON DIFFRACTION. [Feb 63] 9p.
Order from ATS $14.25 ATS-67P66G

Trans. of Z[eitschrift für] Krist[allographie] (Germany) 1960, v. 114, no. 3/4, p. 232-244.

DESCRIPTORS: *Barium compounds, Nitrates, *Crystal structure, *Neutron diffraction analysis.

Nolting, J.
MEASUREMENT OF THE DIFFUSION COEFFICIENT IN SOLIDS AT DIFFERENT TEMPERATURES WITH A CONTINUOUS METHOD USING THE TECHNIQUE OF RADIOACTIVE SURFACES. [Feb 63] 10p.
Order from ATS $13.75 ATS-65P65G

Trans. of Z[eitschrift für] Physik[alische] Chem[ie] Frankfurt (West Germany) 1962 [Neue Folge] v. 32, p. 154-167.

DESCRIPTORS: *Tracer studies, Radioactive isotopes, Diffusion, Solids.

Nudel'man, S. L.
ON THE LATTICE PARAMETERS OF CHRYSOTILE (INDEXING OF POWDER PATTERNS WITH MONOCLINIC SYMMETRY). [1959] 3p. 7 refs. MDF N-108.
Order from OTS $0.50 62-11387

Trans. of #Kristall[ografiya] (USSR) 1959, v. 4, no. 4, p. 621-623.

DESCRIPTORS: *Magnesium compounds, *Silicates, *Crystal structure, Crystals, Symmetry (Crystallography).

If the quadratic form of a crystal of monoclinic symmetry is represented

$$\frac{1}{d^2} = \frac{h^2}{a_1^2} + \frac{k^2}{b^2} + \frac{l^2}{c_1^2} - \frac{2h}{a_1}\frac{}{c_1} \cos\beta, \text{ where } a_1 = a \sin\beta,$$

and $c_1 = c \sin\beta$ then it is seen that it differs from the quadratic form for a crystal of rhombic symmetry by the term $-(2hl \cos\beta/a_1 c_1)$. Consequently, the indices h00, OkO, OOl, hkO, Okl of a monoclinic system can be found on an instrument, exactly as is done in the case of a rhombic system (in the case of the monoclinic system, as opposed to the rhombic system, the hkO indices are replace by the hOl on the rhombus and the OOl by the OkO on the parallelogram). The hOl indices are defined by the vector $2hl \cos\beta$ (see fig. 1), which is the difference in the ordinates of the appropriate lines of the hOl -rhombus and the points of intersection of the OY axis and the line $\frac{1}{d^2}$ determined experimentally from the hOl data and directed toward the hOl line mentioned. The hkl indices are defined by a similar vector, equal to the difference in the ordinates of the appropriate hOl line and the points of intersection of the line $1/d^2$, determined experimentally from hkl data, and the appropriate OkO lines. By processing the data of the Gruner x-ray diagrams the following values were obtained for the chrysotile lattice parameters: a = 9.068; b = 6.715; c = 8.089 A; $\beta = 62^0$.

Pomey, Jacques and Roux, Rene Lucien le.
INFLUENCE OF IMPURITIES ON ALLOTROPIC TRANSFORMATION OF COBALT AND ITS ALLOYS (Influence des Impuretes sur la Transformation Allotropique du Cobalt et de ses Alliages). [1962] [3]p. 3 refs.
Order from SLA $1.10 62-18791

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1954, v. 238, no. 7, p. 814-815 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Cobalt, *Cobalt alloys, Impurities, Phase studies.

Pinsker, Z. G. and Kaverin, S. V.
THE ELECTRONOGRAPHIC DETERMINATION OF THE STRUCTURE OF IRON CARBIDE Fe_4C. May 59 [13]p. 8 refs. BISI Trans. no. 1308; [DSIR] NLL M. 4579.
Order from OTS or SLA $1.60 62-24222

Trans. of Kristallografiya (USSR) 1956, v. 1, no. 1, p. 66-72.

DESCRIPTORS: *Carbides, *Iron compounds, Crystal structure, Electron diffraction analysis.

Ryabinkin, Yu. S.
DISTRIBUTION OF THE POTENTIAL, FIELD AND CURRENT CARRIER CONCENTRATION IN THE REGION OF A STRONG FIELD OF FUSED p-n JUNCTIONS AND PIN-STRUCTURE. I. FORMULATION AND SOLUTION OF THE PROBLEM. [1960] 12p. 7 refs. MDF R-122.
Order from OTS $0.50 62-11284

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Fizika (USSR) 1960, no. 1, p. 93-103.

DESCRIPTORS: *Semiconductors, *Electrons, Drift, Space charges, Electric fields, Intensity, Distribution.

Certain questions of the theory of fused p-n junctions are analyzed in the first part taking into account electron and hole space charge and the dependence of their mobilities on the electric field intensity.

Terenin, A., Putzeiko, E., and Akimov, I.
OPTICAL SENSITIZATION OF SEMICONDUCTORS BY ORGANIC DYES. [1962] 14p.
Order from ATS $19.75 ATS-68P66F

Trans. of J[ournal de] Chim[ie] Phys[ique] (France) 1957, v. 54, p. 716-725.

DESCRIPTORS: *Semiconductors, Optical properties, Sensitivity, Organic compounds, *Dies.

Weiss, K.
THE ABSORPTION, PHOTOSENSITIVITY, AND ELECTRICAL CONDUCTIVITY CHARACTERISTICS OF CdS LAYERS. [Feb 63] 4p.
Order from ATS $5.00 ATS-29P66G

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1947, v. 2a, p. 650-652.

DESCRIPTORS: *Cadmium compounds, Sulfides, Absorption, Photosensitivity, Electrical conductance.

Wilke, K.-T.
THE ACTIVATION OF CdS CRYSTALS. [Feb 63] 5p
Order from ATS $6.00 ATS-25P66G

Trans. of Z[eitschrift für] Physik[alische] Chem[ie] Leipzig (East Germany) 1955, v. 205, p. 73-77.

DESCRIPTORS: Crystals, *Cadmium compounds, Sulfides.

Wlerick, G.
INTERPRETATION OF THE ABNORMAL VARIATION OF THE PHOTOCONDUCTIVITY OF CADMIUM SULFIDE AS A FUNCTION OF THE ILLUMINATION. [Feb 63] 3p.
Order from ATS $4.25 ATS-30P66F

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1954, v. 238, no. 26, p. 2514-2516 (pub. by Gauthier Villars et Cie., Paris).

DESCRIPTORS: *Cadmium compounds, Sulfides, *Photoconductivity, Vibration, Illumination.

Theoretical Physics

Dobretsov, L. N.
ON THE PROBLEM OF THE THEORY OF SURFACE IONIZATION (K Voprosu o Teorii Poverkhostnoi Ionizatsii) tr. by Sergey Shewchuck. Jan 62 [33]p. (foreign text included) 7 refs.
Order from OTS or SLA $3.60 UCRL Trans-783

Trans. of Politekhnicheskii Institut, Leningrad. Trudy (USSR) 1958, no. 194, p. 143-153.

DESCRIPTORS: *Electrodes, Surface properties, *Ionization, Theory, Thermodynamics, Thermionic effect, Atoms, Ions, Emissivity.

Smirnov, R. V.
THEORY OF RELATIVITY AND THE ELECTROMAGNETIC FIELD. Jan 61, 10p. 5 refs. MDF S-177; AFCRL 18; AD 251 775.
Order from OTS $0.50 62-11475

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Fizika (USSR) 1960, no. 5, p. 35-42.

DESCRIPTORS: *Electromagnetic fields, *Relativity theory, Field theory, Groups (Mathematics), Matrix algebra.

This space of events is considered in terms of matrices that are subgroups of the Lorentz group. Motion equations are derived for the particle and force fields. It is shown that a force acting on a particle that is described by an unending world-time line of the space of events can be a Lorentz type force. Conditions are expressed to assist in distinguishing vector quantities among which field equations may be found.

Thermodynamics

TWO SOVIET ARTICLES ON RADIATING FIN PROFILES. 6 Feb 63 [21]p. 11 refs. JPRS: 17512.
Order from OTS $0.50 63-21069

Trans. of Akademiya Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Energetika i Avtomatika, 1962, no. 6, p. 39-49.

DESCRIPTORS: *Fins, *Thermal conductivity, Cooling. Blackbody radiation, Design, Mathematical analysis, Differential equations.

Contents:
Optimum form for radiation-cooled fins, by G. L. Grodzovskii
Optimum form for heat-conducting fins taking mutual irradiation into account, by V. V. Frolov.

Detkov, S. P.
THE USE OF ELECTRONIC COMPUTERS FOR THE CALCULATION OF HEAT TRANSFER BY RADIATION. [1962] [7]p. 5 refs. C.E. Trans. 2543; DSIR NLL M8820.
Order from OTS or SLA $1.10 62-32810

Trans. of Teploenergetika (USSR) 1961, v. 8, no. 9, p. 33-36.

DESCRIPTORS: *Thermal radiation, *Heat transfer, Simulation, *Computers, Matrix algebra, *Algorithms Tables.

An algorithm for the calculation of heat transfer by radiation is described, and an example of solution of the problem on an electronic computer is given. (Author)

Kon'kov, A. S., and Modnikova, V. V.
EXPERIMENTAL INVESTIGATION OF THE CONDITIONS OF DETERIORATION OF HEAT TRANSFER DURING BOILING IN TUBES. [1962] 11p. 10 refs.
Order from OTS or SLA $1.60 AEC-tr-5539

Trans. of Teploenergetika (USSR) 1962, v. 9, no. 8, p. 77-81.

DESCRIPTORS: *Heat transfer, Deterioration, *Boiling, Steam, Water, Pipes, *Fluid flow.

An experimental investigation is made of the conditions of deterioration of heat transfer during the flow of steam-water mixtures in vertical tubes over a broad range of variation of the parameters. The experiments were carried out at pressures of 20, 50, 100, 150 and 200 abs. atm. The mass flow rate varied between 100 and 13, 200 kg/m^2. sec and the heat load between $85 \cdot 10^3$ and $3.34 \cdot 10^6$ kcal/m^2.hr. The tubes used in the experiments had diameters of 4, 8, and 32.2 mm. (Author)

Kostryukova, M. O. and Strelkov, P. G.
THE HEAT CAPACITY OF SOLID OXYGEN BELOW 4°K, tr. by Donald C. Rich. 5 July 62 [8]p. 8 refs. [AMC] (Redstone) Trans-nr-28-62.
Order from OTS or SLA $1.10 62-25869

Trans. of Akademiya Nauk SSSR. Doklady, 1953, v. 90, no. 4, p. 525-528.
Another trans. is available from OTS or ETC $1.55 as 62-26017, MTWL-645, 6p.

DESCRIPTORS: *Cryogenics, *Solidified gases, *Oxygen, Specific heat, Measurement, *Calorimeters, Design.

Krebs, G.
EXPERIMENTS IN (UPON) DELAYED BOILING (SUPERHEATING). Paper no. 2. [1962] 8p. (figs. tables omitted) 5 refs.
Order from SLA $1.10 63-10715

Trans. of Annalen [der Physik] (Germany) 1869, v. 136, p. 144-151.

DESCRIPTORS: Thermodynamics, Liquids, *Heating, Boiling.

Schulze, A.
METALLIC MATERIALS FOR THERMOCOUPLES, II. METALLIC MATERIALS FOR THERMOCOUPLES USING BASE METALS [Über Metallische Werkstoffe für Thermoelemente. II. Abschnitt. Metallische Werkstoffe fur Thermoelemente aus Unedlen Metallen]. [1962] [29]p. (figs. omitted) 32 refs.
Order from SLA $2.60 62-18328

Trans. of [Metallwirtschaft] Metallwissenschaft [Metalltechnik] (Germany) 1939, v. 18, no. 13, p. 271-276.

DESCRIPTORS: *Thermocouples, Thermoelectricity, Metals, Temperature, Electrodes, Thermal conductivity, Alloys, Oxidation, Materials.

Schulze, A.
METALLIC MATERIALS FOR THERMOCOUPLES [I]. [Über Metallische Werkstoffe für Thermoelemente]. [1962] 22p. (figs. [refs.] omitted).
Order from SLA $2.60 62-18329

Trans. of [Metallwirtschaft] Metallwissenschaft [Metalltechnik] (Germany) [1939, v. 18] no. 12, p. 249-254.

DESCRIPTORS: *Thermocouples, Thermoelectricity, Metals, Temperature, Alloys, Electrodes, Sensitivity, Recrystallization, Materials.

Schulze, A.
METAL[LIC] MATERIALS FOR THERMO[COUPLES]. III. THERMOELECTRIC CHARACTERIZATION OF METALLIC MATERIALS [Über Metallische Werkstoffe für Thermoelemente. III. Abschnitt. Thermoelektrische Charakterisierung der Metallischen Werkstoffe]. [1962] 21p. (figs. [refs.] omitted).
Order from SLA $2.60 62-18308

Trans. of [Metallwirtschaft] Metallwissenschaft [Metaltechnik] (Germany) 1939, v. 18, no. 15, p. 315-320.

DESCRIPTORS: *Thermocouples, Thermoelectricity, Temperature, Metals, Alloys, Electrodes, Materials.

(See also 62-18328)

Usmanov, A. G.
GENERALIZATION OF EXFERIMENTAL DATA ON THE VISCOSITY AND HEAT CONDUCTIVITY OF LIQUID METALS. 6 Sep 62 [11]p. 4 refs.
FTD-TT-62-933; AD-287 693.
Order from OTS or SLA $1.60 63-13176

Unedited rough draft trans. of mono. Konvektivnyi i Luchistyi Teploobmen, Moscow, 1960, p. 97-106. A trans. of the complete mono. is available from OTS or SLA $21.00 as 62-33638, FTD-TT-61-395, 11 Sep 62 [370]p.

DESCRIPTORS: *Liquid metals, *Thermal conductivity, *Viscosity, *Heat transfer, Physical properties, Thermodynamics, Tables, Reactor coolants.

The available data on the coefficients of dynamic viscosity and heat conductivity are expanded to a study of transfer in the gaseous phase.

Zenkevich, B. A., Remizov, O. V., and Subbotin, V. I.
THE EFFECT OF CHANNEL GEOMETRY ON THE CRITICAL HEAT LOADS IN THE FORCED FLOW OF WATER. [1962] 7p. 4 refs.
Order from OTS or SLA $1.10 AEC-tr-5538

Trans. of Teploenergetika (USSR) 1962, v. 9, no. 7, p. 81-83.

DESCRIPTORS: *Nuclear reactors, *Heat transfer, Reactor coolants, Water, *Fluid flow, *Reactor fuel elements, Geometry.

Zotikov, I. A. and Bronskii, L. N.
AN EXPERIMENTAL STUDY OF HEAT TRANSFER WITH MELTING OF A METAL AND WITH MOLTEN METAL FED THROUGH A POROUS WALL IN A SUPERSONIC STREAM. 30 Oct 62 [9]p. 8 refs.
FTD-TT-62-1328.
Order from OTS or SLA $1.10 63-13921

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962, v. 5, no. 4, p. 10-14. Another trans. is available from ICE in v. 2, no. 4, $15.00/year.

DESCRIPTORS: *Heat transfer, Liquid metals, Melting, Injection, Supersonic flow, Porous materials, Films, Thermal conductivity, Supersonics.

Experiments are described on heat transfer on the surface of a body while it is being melted in a supersonic stream while molten metal is being fed to the surface through a porous wall. Quantitative relations are presented which are explained by the influence of the liquid film running off upon heat transfer. (Author)

Chepura, V. F., Kashcheev, B. L., and Bondar', B. G.
RESEARCH ON THE DIRECTIONAL SCATTERING OF UHF RADIO SIGNALS BY METEOR TRAILS.
11 Feb 63 [13]p. 2 refs. JPRS: 17555.
Order from OTS $0.50 63-21089

Trans. of #Elektrosvyaz' (USSR) 1962, v. 16, no. 11, p. 3-10.

DESCRIPTORS: *Radio signals, Ultrahigh frequency, *Wave transmission, Scattering, *Meteors, Ionization.

Results are given of an experimental study of uhf scattering by meteor trails. Data has been obtained on the variation in the correlation factor of two signals of nearly the same frequency received simultaneously at the same location. During the experiment one of the transmitters was fixed, while the other was moved to various sites. An examination is made of the dependence of the correlation factor on the level at which the signal durations and reflection coincidence times are measured, as well as on the duration of the signal. (Author)

Khemel'nitskii, E. P.
PRINCIPLES OF CONSTRUCTING SYSTEMS OF OUTPUT CIRCUITS OF MEDIUM WAVE TRANSMITTERS. [1961] 5p. MDF K-116.
Order from OTS $0.50 62-11586

Trans. of Radiotekhnika (USSR) 1956, v. 11, no. 1, p. 3-6.

DESCRIPTORS: *Wave transmission, Radio transmitters, Circuits, Construction, *Tuned circuits.

The construction is analyzed of a circuit system at the output of a powerful medium wave transmitter. A four-stage system is proposed with capacity coupling between the stages. (Author)

Salomonovich, A. E. and Ataev, O. M.
THERMAL EMISSION AND ABSORPTION OF 8 mm BAND RADIOWAVES IN THE TERRESTRIAL ATMOSPHERE. [1961] 9p. 12 refs. MDF S-181.
Order from OTS $0.50 62-11476

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedenii]. Radiofizika (USSR) 1960, v. 3, no. 4, p. 606-614.

DESCRIPTORS: *Radiowaves, *Absorption, *Atmosphere, Thermal radiation, Propagation.

Values are presented of the molecular absorption of 8 mm band radiowaves obtained according to the results of measuring the intrinsic thermal emission of the terrestrial atmosphere. A spherically, symmetric model of a humid atmosphere in which absorption and scattering of radiowave energy in the condensed phase are not taken into account is used in determining the

absorption coefficients. For clear days which are described well enough by this model, the following values are obtained for the absorption coefficients in oxygen and water vapor, respectively: $k_{01} = 0.0046$ neper/km^{-1} = 0.04 db /km^{-1} and $k_{02} = 0.00046$ neper / km^{-1} = 0.004 db / km^{-1} per 1 g/m^{-3}. The results obtained permit an estimate of the total 8 mm radiowave absorption according to the absolute humidity of air and according to the distance traversed by the radiowaves through the atmosphere.

Sitenko, A. G. and Kirochkin, Yu. A.
ON THE SCATTERING OF HYDROMAGNETIC WAVES BY TURBULENT FLUCTUATIONS. [1960] 4p. 3 refs. MDF S-165; AFCRL-TN-60-772.
Order from OTS $0.50 62-11343

Trans. of mono. Vopr[osy] Magn[itnoi] Gidrosin[amiki] i Dinam[iki] Plazmy, Riga, 1959, p. 143-146.

DESCRIPTORS: *Magnetohydrodynamics, Scattering, Propagation, Turbulence, Fluid mechanics, Plasma physics, Magnetic fields, Intensity.

The intensity of hydromagnetic wave scattering by turbulent fluctuations in the velocity and magnetic field intensity is determined.

Sveshnikov, A. G.
EXCITATION OF IRREGULAR WAVEGUIDES. [1960] 5p. 10 refs. MDF S-168.
Order from OTS $0.50 62-11286

Trans. of N[auchnye] D[oklady] V[ysshei] Sh[koly]. Fiz[iko]-mate[maticheskie] Nauk[i] (USSR) 1959, no. 2, p. 162-165.

DESCRIPTORS: *Waveguides, Excitation, Mathematical analysis, Differential equations, Series, Radiowaves Propagation.

Synakh, V. S.
RADIATION OF GRAVITATIONAL WAVES BY ELECTROMAGNETIC FIELDS. [Jan 60] 3p. 1 ref. MDF S-143; AFCRL-TN-60-131.
Order from OTS $0.50 62-11273

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii]. Fizika (USSR) 1959, no. 4, p. 119-122.

DESCRIPTORS: *Gravity, *Electromagnetic fields, *Electromagnetic waves, Attenuation, Potential theory, Tensor analysis, Relativity theory.

The radiation of gravitational waves by a spherical electromagnetic wave is analyzed. It is shown that this must lead to the attenuation of the electromagnetic wave with distance.

Yakolev, O. I.
TAKING ANTENNA HEIGHT INTO ACCOUNT IN THE THEORY OF TROPOSPHERIC SCATTERING OF METER WAVES. [1961] 7p. 3 refs. MDF I-112.
Order from OTS $0.50 62-11282

Trans. of Radiotekhnika i Elektronika (USSR) 1956, v. 1, no. 3, p. 309-312.

DESCRIPTORS: *Radio waves, Scattering, Attenuation, Troposphere, *Antennas, Antenna configurations.

The dependence is analyzed of the field intensity far beyond the horizon on the antenna height, in the theory of tropospheric scattering of meter radiowaves. It is shown that the interference character of the field in the scatter region should be taken into account in computations of the scattered field. Taking into account the interference of the ground waves and those reflected from the earth permits a dependence to be established between the values of the signal received and the antenna height. (Author)

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

AT THE SESSION OF THE GENERAL MEETING OF THE ACADEMY OF SCIENCES KAZAKH SSR.
28 Jan 63 [8]p. JPRS: 17317.
Order from OTS or SLA $1.10 63-15377

Trans. of Akademiya Nauk Kazakh[skoi] SSR, Alma-Ata Vestnik, 1962 [v. 18] no. 6(207) p. 26-29.

DESCRIPTORS: *Symposia, *Scientific organizations, Scientific research.

AUTOMATION, 1962, VOL. 7, NO. 3: [SELECTED] TRANSLATIONS. 18 Feb 63 [82]p. 33 refs. JPRS: 17688.
Order from OTS $2.25 63-21151

Trans. of Avtomatyka (USSR) 1962, v. 7, no. 3, p. 33-48, 51-56, 72-82, 86-97.

DESCRIPTORS: *Automation, *Cybernetics, *Artifical intelligence, *Pattern recognition, Control systems, Feedback, *Medicine, Diagnosis, *Computers, *Digital systems, Circuits, *Coding, Programming, *Reading machines.

Contents:
Self-organizing system with positive feed-backs, by O. G. Ivakhnenko
Programming the problem of establishing a diagnosis (Research Methods, Techniques and Equipment, TT, for electronic computers, by K. O. Shkabara and S. P. Khozyainova
The rule of back code conversion and its application to the construction of circuits of digital code conversion, by O. S. Belima
Some questions that determine the development of cybernetics, by V. M. Glushkov
Letter to the editor, by Frank Rosenblatt
Analysis of perceptrons, by S. F. Kozubovs'kyi
Summary of the directions of cybernetic development.

FOREIGN DEVELOPMENTS IN MACHINE TRANSLATION AND INFORMATION PROCESSING NO. 112. 17 Jan 63 [48]p. JPRS: 17184.
Order from OTS $1.25 63-11534

Trans. of Znanie-Sila (USSR) 1962 [v. 37] no. 10, p. 29-35.
Another trans. of (p. 29-32) is available from OTS or SLA $1.60 as 63-13492, JPRS-16716, 17 Dec 62 [17]p.

DESCRIPTORS: Machine translation, *Digital computers, Artificial intelligence, *Speech, Bionics, *Cybernetics, Teaching machines.

Contents:
A machine capable of conversing, by E. Saparina
Cybernetics in the school, by L. Landa.

PROGRESS IN CYBERNETICS IN THE USSR: REVIEW. 8 Nov 62, 3p. AID rept. 62-186.
Order from OTS or SLA $1.10 63-13249

DESCRIPTORS: *Reviews, *Cybernetics, Symposia, Brain, Nervous system, Conditioned reflex, Bionics, Digital computers, Artificial intelligence, Biology, Bioelectronics.

Contents:
Cybernetics and the brain, by E. A. Shkabara and others (review of mono. Kibernetika i Mozg, Kiev, 1961, 52p.)
##Session of the division of biological sciences of the Academy of Sciences USSR on the biological aspects of cybernetics (review of Akademiya Nauk SSSR. Izvestiya Seriya Biologicheskaya, 1962 [v. 27] no. 4, p. 644-647).
##Reactivity of the organism and the type of nervous system, by R. E. Kavetskii and others (review of mono. Reaktivnost' organizma i tip nervnoi sistemy, Kiev, 1961, 326p.)
##Scientific notes: problems of neurocybernetics, by S. N. Braines and others
##Problems of cybernetics in biology and medicine, by V. D. Moiseev (review of mono. Voprosy kibernetiki v biologii i meditsine, Moscow, 1960, 301p.).
##Translations of these items are available separately.

RECENT ACTIVITIES OF THE LATVIAN ACADEMY OF SCIENCES. 12 Feb 63 [35]p. JPRS: 17579.
Order from OTS $1.00 63-21100

Trans. of Akademiya Nauk Latviiskoi SSR [Riga]. Izvestiya, 1962, no. 3(176) p. 3-12, 153; and no. 6(179) p. 123-127, 146.

DESCRIPTORS: *Scientific research, Scientific organizations, Research program administration, Symposia.

Contents:
General Meeting of Academy of Sciences, Latvian SSR, by Ya. Magone
Results of scientific work of Academy of Sciences Latvian SSR for 1961, by K. Plaude
Chronicle of events in the Presidium of the Academy of Sciences of the Latvian SSR, for Apr 62, by J. Magone
Chronicle of events in the Presidium of the Academy of Sciences of the Latvian SSR, for Jan-Feb 62, by J. Magone.

TRANSLATED POLISH PATENTS. Mar 63 [201]p.
Order from OTS $3.00 63-11416

Trans. of Polish patents including patent number, class number, name and residence of patentee and patent owner, title, filing and priority date, and first claim of patents from the following years: 1957, 178 patents; 1958, 1 patent; 1960, 12 patents; 1961, 108 patents.

DESCRIPTORS: *Patents, Inventions, *Poland, Fuels, Food, Machinery, Textiles, Chemical engineering, Transportation, Electrical engineering, Coatings, Medical equipment, Drugs, Metals, Wood, Plastics, Rubber, Glass, Paper, Agriculture.

TRANSLATIONS ON COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY NO. 18. 24 Jan 63 [66]p. 29 refs. JPRS: 17277.
Order from OTS or SLA $6.60 63-15388

Trans. of K'o Hsüeh T'ung Pao (Chinese People's Republic) 1962, no. 10, partial table of contents and p. 27-49.

DESCRIPTORS: *Science, Literature, *China, Scientific personnel, Biology, Complex compounds, Paramagnetic resonance, Resins, Chlorides, Amphibians, Embryos, Electrical conductance, Lead alloys, Calcium alloys, Antimony alloys, Tin alloys, Production, Minerals, Symposia, Aquatic animals, Plants, Histology, Paleoecology, Aluminum compounds, Oxides, Physical chemistry, Insecticides.

Contents:
Scientific achievements of Mr. Chu Hsien, by T'ung Ti-chou
Electron spin resonance measurements in molecular complexes between aromatic hydrocarbons and halogens, by Hsü Kuang-chih and T'ang Yu-ch'i
Chloride substitution of polyhydric resin, by Ting Kai-Shuang and others
Electrical activities of the surface skin of cynops orientalis, by Fan Shin-fan and Tai Jung-hsi
Production of lead-calcium, tin-calcium and antimony-calcium alloys with calcium oxide lead restoration method, by Cheng Wen-sheng
A thorium-poor monozite, by Chang P'ei-shan
National Conference of Marine Animal and Plant Life, by Teng Ang
National Conference on Cytology (no. 1) by Wang Huan-pao
The ninth conference and the second congress of delegates of the Chinese Paleontological Society, by Chang Jih-tung
The physical chemistry of producing aluminum oxide, by Chia Wen
Insecticides for agricultural use: book review, by Yen Shih-wei
Collected essays of science and technology, Shanghai, 1960: book review, by Hu Chun-jung.

Fityalov, S. Ya.
ON MODELS OF SYNTAX FOR MACHINE TRANSLATION. Foreign Developments in Machine Translation and Information Processing no. 84. 28 Mar 62 [24]p. 6 refs. JPRS: 13197.
Order from OTS or SLA $2.60 62-24791

Trans. from Konferentsiya po Obrabotke Informatsii, Mashinnomu Perevoda i Avtomaticheskomu Chteniyu Teksta. Doklady (USSR) 1961, no. 10, 13p.

DESCRIPTORS: *Machine translation, *Language, Algorithms.

Grigoryana, A. T., ed.
FROM THE HISTORY OF SCIENCE AND ENGINEERING IN EASTERN COUNTRIES: SELECTED PARTS. 19 Sep 61 [149]p. JPRS: 8900.
Order from OTS or SLA $11.00 61-28394

Trans. of mono. Iz Istorii Nauki i Tekhniki Stranakh Vostoka, Moscow, 1960, foreward, p. 7-33, 82(excerpt), 155-172, 270-271 (excerpts), 467-473.

DESCRIPTORS: *Science, *Engineering, History, Agriculture, Water supplies, *Scientific personnel, Personnel, *China, *India.

Contents:
Editor's foreward
Soviet-Chinese scientific connections, by I. N. Kiselov
History of agricultural implements in northeast China, by V. S. Starikov
Soviet-Indian scientific connections, by S. G. Korneev
Water resources of India and their use, by F. Ya. Nesteruk
Scientists of countries of the East, members of the Academy of Sciences of the USSR, by A. T. Grigoryan
Table of contents.

Kovalevskii, V. A.
CORRELATION METHOD FOR RECOGNIZING PATTERNS. 31 Jan 63 [15]p. 6 refs. JPRS: 17391.
Order from OTS $0.50 63-21024

Trans. of Zhurnal Vychislitel'noi [Matematiki i] Matematicheskoi Fiziki (USSR) 1962 [v. 2] no. 4, p. 684-694.

DESCRIPTORS: *Pattern recognition, *Cybernetics, Artificial intelligence, *Correlation techniques.

Kozubovs'kyi, S. F.
IDEALIZED AND PRACTICAL PANDEMONIUM. 1 Feb 63 [14]p. 4 refs. JPRS: 17432.
Order from OTS $0.50 63-21043

Trans. of Avtomatyka (USSR) 1962, v. 7, no. 4, p. 80-85.

DESCRIPTORS: *Pattern recognition, Data transmission systems, *Information theory, Coding, Artificial intelligence, Computer logic, *Cybernetics.

A structural diagram of an idealized pandemonium is depicted. The data or images which must be distinguished are fed to the input of the instrument. To each possible image which belongs to a certain number there corresponds a functional block (subprogram) which the author imagines in the form of a demon in a box. The image which is being distinguished is presented uniformly "for examination" by all the demons. Each demon calculates the degree of his resemblance to the image that has been shown and gives an output signal uniformly connected with the degree of its resemblance. The upper "decision demon" selects the image that belongs to the demon whose output signal is the greatest. (Author)

Lazarev, V. G.
MECHANISATION OF THE PROCESS OF SELECTING THE MINIMUM NUMBER OF INTERMEDIATE RELAYS. [1962] [8]p. 9 refs. [DSIR] NLL M. 4994.
Order from OTS or SLA $1.10 62-32082

Trans. of Problemy Peredachi Informatsii (USSR) 1960, no. 6, p. 24-33.

DESCRIPTORS: *Information theory, *Relays, *Electronic relays, *Switching circuits, Automation, Mathematical logic, *Algorithms, Tables.

The advisability of mechanising the process of constructing a realisable table of connexions with a minimum number of intermediate relays is examined and logical circuits of the algorithm of this process, which form the basis of a machine for the synthesis of relay switching circuits, are set forth. (Author)

Liebacher, Heinz and Thiele, Helmut.
THE SIGNIFICANCE OF CYBERNETICS FOR SCIENCE, TECHNOLOGY, AND INDUSTRY IN THE GERMAN DEMOCRATIC REPUBLIC. 5 Feb 63 [9]p. JPRS: 17465.
Order from OTS $0.50 63-21047

Trans. of Einheit (East Germany) 1962 [v. 17] no. 12, p. 146-150.

DESCRIPTORS: *Cybernetics, Conferences, Science, Industries, Mathematics, Philosophy, Economics, Psychology, Education,

Trapeznikov, V. A.
CYBERNETICS AND AUTOMATIC CONTROL. 22 Jan 63 [26]p. JPRS: 17227.
Order from OTS or SLA $2.60 63-15399

Trans. of Akademiya Nauk SSSR. Vestnik, 1962, v. 32, no. 5, p. 33-42.

DESCRIPTORS: *Cybernetics, Automatic, Control, *Control systems, Bionics, Artificial intelligence, Pattern recognition, Learning, Digital computers, Computers.

Vinakurov, F. P.
SCIENTIFIC ACTIVITIES OF THE ACADEMY OF SCIENCES BELORUSSIAN SSR IN 1961. 23 Jan 62 [18]p. JPRS: 12144.
Order from OTS or SLA $1.60 62-15466

Trans. of Akademiya Navuk BSSR, Minsk. Vestsi. [Seryya Fizika-Tekhnichnykh Navuk, 1962] no. 2 [p. 122-130].

DESCRIPTORS: Scientific organizations, *Scientific research, Research program administration.

Communication Theory

HERALD OF COMMUNICATIONS, 1962 [VOL. 22] NO. 10(271). 13 Feb 63 [147]p. JPRS: 17615.
Order from OTS $2.75 63-21124

Trans. of Vestnik Svyazi (USSR) 1962 [v. 22] no. 10(271).

DESCRIPTORS: Periodicals, *Communication systems, *Communication equipment, Amplifiers, Television transmitters, Modulators, Electric insulation, Telegraph systems, Pulse counters, Postal systems, Telegraph equipment, Electric motors, Radio communication systems, Telephone communication systems, Electric cables, Rural areas, Newspapers, Labor, Industrial production, Safety, Symposia.

Contents:
All resources have to be utilized for the fulfillment of State plans and for the improvement in the quality of the work of communications organizations (editorial)
Modernization of the camera-channel intermediate amplifiers of standard television centers, by I. I. Sheifis
A monitoring demodulator for television transmitters, by A. M. Lokshin and N. M. Zevelev
Determination of permissible maximum contact resistances in the case of insulation faults, by I. A. Parikozhka
The use of counting circuits in telegraphy, by P. A. Naumov
Mail transport has to be improved in all possible ways, by V. N. Matsnev
Our experience in processing holiday telegrams, by Ya. I. Beregovskii
Rostov communication workers must improve service to the population, by I. G. Postnov
Increase in the service life of contacts in the governors of telegraph electric motors, by O. B. Pevzner and others
Radio men of Alma-ata are improving radio communication and radio broadcasting facilities, by T. D. Aminov
Fabrication of lead cable sleeves by means of chill casting, by B. Z. Tomchin and A. V. Mikushko
Supervisory communication system of a kolkhoz-sovkhoz administration, by I. Ya. Antonenko
Hundred-percent radiofication of populated localities has been completed, by A. M. Sosnov
Communications in the zone of a territorial administration, by I. G. Dremukh
Inter-rayon newspapers have to be delivered faster, by B. G. Varshavskii
Our demands to the industry (Comments on the article by S. M. Yakushev)
Competition for the title "Communist-Labor Enterprises", by E. M. Sulek
Communications output and its planning, by I. A. Podgorodetskii
Meetings with English communication workers, by A. M. Kanaeva

Slavik, J. and Vachek, J.
ON A NEW METHOD OF TESTING THE INTELLIGIBILITY OF SPEECH. [1959] 7p. 6 refs. MDF S-133.
Order from OTS $0.50 62-11271

Trans. of Slaboproudy Obzor (Czechoslovakia) 1958, v. 19, no. 7, p. 464-466.

DESCRIPTORS: *Speech, Intelligibility, *Telephone communication systems, Test methods, Speech transmission.

The British method of measuring the quality of telephone systems by means of free telephone talks on random geometrical shapes errs, from the linguistic viewpoint, in contrast to the traditional method of nonsense logatomes in that it stresses meaning at the expense of the phonic structure of the language. The same objection can be raised against the procedure adopted by V. Volf (Prague - Slaboproudy obzor, 1958, No. 4, p. 232), which uses pre-arranged subjects of everyday, free conversation as the themes of talks. An adequate method of testing the intelligibility of speech in general can only be a composite one. It should be based mainly on unrelated word materials, to which should be added talks such as suggested by V. Volf as auxiliary material as well as a limited number of nonsense sound-groups which would serve the purpose of testing the transmissibility of sounds. (Author's abstract)

SOCIAL SCIENCES

DEVELOPMENTS IN SOVIET SCIENTIFIC AND MEDICAL EDUCATION IN 1962. 7 Feb 63 [32]p. JPRS: 17526.
Order from OTS $1.00 63-21074

Trans. of Akademiya Nauk Kazakhskoi SSR [Alma-Alta]. Vestnik, 1962 [v. 18] no. 8, [209] p. 103-104; Meditsinskii Rabotnik (USSR) 1962 [v. 25] 15 May, p. 2; Vrachebnoe Delo (USSR) 1962, no. 6, p. 133-134; Sovetskoe Zdravookhranenie (USSR) 1962 [v. 21] no. 12, p. 74-77; and from Pravda Ukrainy (USSR) 1962, 16 Sep, p. 1; Pravda, Moscow (USSR) 1962, 7 Oct, p. 2.

DESCRIPTORS: *Scientific personnel, *Medical personnel, *Education, Sanitary engineering, *Public health, Training, Medicine, History.

Contents:
Measures for further improving the selection and training of scientific cadres
Youth and science
Indications of the first results of certification, by D. Sakhno
Improving the qualification of public health organizers without impairment of production, by N. I. Vlasenko
Dissertations on organization of public health, sanitary statistics, and history of medicine, approved by the higher certification commission in 1958-61, by G. I. Bukhantseva and L. P. Kryukova
What will the young engineer start his career with, by G. Alakseev.

RECENT HUNGARIAN STATUTES GOVERNING SCIENCE, ENGINEERING, AND HIGHER EDUCATION. 13 Feb 63 [34]p. JPRS: 17617.
Order from OTS $1.00 63-21126

Trans. of Magyar Kozlony (Hungary) 1948, no. 264, p. 2479; 1949, no. 17, 22 Jan, p. 142; 4 June, p. 838; 3 Oct, p. 1716; 1957, 15 Apr, p. 276; no. 63, 5 June, p. 355-356; 1960, 15 Oct, p. 615-616; 1961, no. 5, 22 Jan, p. 53; 14 Sep, p. 484; 1962, 27 Jan, p. 47-50; no. 40, 11 June, p. 374-376.

DESCRIPTORS: *Political science, *Hungary, Science, Engineering, Education, Culture, Scientific organizations.

Contents:
Decrees nos. 4069/1949 (118) Korm; 4275/1949 (211) M. T.; 24/1960; 11950/1958 (30 Nov) Korm (article 6); 600/1949 Korm (article 3); 32/1957 (5 June); 2/1961 (22 Jan); 22/1962 (11 June) and Resolutions nos. 1045/1957 (25 Apr); 1016/1962 (30 June); 1017/1961 (14 Sep); 1003/1962 (27 Jan); no. 1015/196. (11 June).

Bakaev, O.
CYBERNETICS AND PLANNING. 5 Feb 63 [6]p. JPRS: 17466.
Order from OTS $0.50 63-21048

Trans. of Nauka i Zhyttya (USSR) 1962 [v. 12] no. 2, p. 20-23.

DESCRIPTORS: *Cybernetics, *Economics, Computers, *Scheduling, Industrial production, Transportation.

A discussion of some applications of optimal control systems in the field of economics.

Dorien, A. F., Compiler.
ELECTRONICS, AUTOMATION AND SCIENTIFIC INSTRUMENTS: SIX LANGUAGE DICTIONARY. Dec 62, 732p.
Order from Prentice-Hall, Inc., Englewood Cliffs, N. J. $16.95

DESCRIPTORS: *Dictionaries, Electronics, Automation, Science, Instrumentation.

Dumler, S. and Sedegov, R.
AN ELECTRONIC MACHINE HELPS THE SHOP. 6 Feb 63 [6]p. JPRS: 17511.
Order from OTS $0.50 63-21068

Trans. from Izvestiya (USSR) 1962, 25 Dec.

DESCRIPTORS: *Automation, *Industrial production, Control systems, Documentation, Electronic equipment, Computers, *Data processing systems, *Economics.

A discussion of the mechanization of production control procedures.

Hennecke, A.
MANAGEMENT AND INTERNAL ACCOUNTING IN A STEEL WORKS AND A ROLLING AND TUBE MILL. Jan 63.
Order from BISI £5 5s BISI-2731

Trans. of Stahl und Eisen (West Germany) 1961, v. 81 [no. 23] p. 1530-1536.

DESCRIPTORS: *Steel industry, Rolling mills, Operation, Labor, *Management engineering, *Economics.

Kerimov, D. A., Andreev, N. D. and others.
USING CYBERNETIC METHODS IN LAW (EXPERIENCE OF WORKING A LAW TEXT FOR MACHINE PROCESSING). 23 Jan 63 [10]p. 5 refs. JPRS: 17256.
Order from OTS or SLA $1.10 63-15353

Trans. of Leningrad U. Vestnik (USSR) 1962, v. 17, no. 11 [Seriya Ekonomiki, Filosofii i Prava, no. 2] p. 141-144.
Another trans. is available from OTS or SLA $1.10 as 62-32559, JPRS-14967, 27 Aug 62 [9]p.

DESCRIPTORS: *Political science, Programming (Computers), Coding, *Cybernetics, Digital computers, Computer logic.

Pavlov, I. V. and Farberov, N. P.
SEVERAL THEORETICAL PROBLEMS OF A SOCIALIST STATE OF ALL THE PEOPLE (IN CONNECTION WITH MATERIAL OF THE MARCH PLENUM OF THE CC CPSU) [AND] A STATE OF ALL THE PEOPLE IS THE NATURAL RESULT OF THE DEVELOPMENT OF THE DICTATORSHIP OF THE PROLETARIAT. 1 Feb 63 [62]p. 21 refs. JPRS: 17425.
Order from OTS $1.75 63-21037

Trans. of Sovetskoe Gosudarstvo i Pravo (USSR) 1962 [v. 32] no. 7, p. 3-24.

DESCRIPTORS: *Communism, Sociology, *Political science, *Economics, Theory.

Tuyns, A.
FREQUENCY OF THE SMOKING HABIT IN AN URBAN POPULATION. [1962] 6p.
Order from K-H $7.50 K-H-5968-b

Trans. of Arch[ives] Belg[es de] Med[ecine] Sociale [Hygiene, Medecine du Travail et Medecine Legale, 1956, v. 14, no. 5, p. 275-278.

DESCRIPTORS: *Smokes, *Cigarettes, *Urban areas, Population.

BOOK REVIEWS

BR-SOV/6076
Peregud, Yeva Abramovna, Mariya Solomonovna Bykhovskaya, and Yelena Vladimirovna Gernet
RAPID METHODS FOR DETECTING [THE PRESENCE OF] HARMFUL SUBSTANCES IN THE AIR (Bystryye metody opredeleniya vrednykh veshchestv v vozdukhe) Moscow, Goskhimizdat, 1962. 272p. Errata slip inserted. 10,000 copies printed.

BR-SOV/6077
Suslov, Nikolay Ivanovich
SUBSTITUTING PLASTICS FOR METALS (Zamena metallov plastmassami) Moscow, Mashgiz, 1962. 201p. 22,000 copies printed.

BR-SOV/6078
Khanin, Arnol'd Arkad'yevich
PETROLEUM RESERVOIRS AND GAS DEPOSITS IN THE USSR (Kollektory nefti i gaza mestorozhdeniy SSSR). Moscow, Gostoptekhizdat, 1962. 100p. 2600 copies printed.

BR-SOV/6081
Aronin, Grigoriy Solomonovich
PRACTICAL AERODYNAMICS; MANUAL FOR FLYING PERSONNEL (Prakticheskaya aerodinamika; uchebnik dlya letnogo sostava). Moscow, Voyenizdat M-va obor. SSSR, 1962. 382p. 15,000 copies printed.

BR-SOV/6082
Solodov, Aleksandr Vasil'yevich
VARYING-PARAMETER LINEAR SYSTEMS OF AUTOMATIC CONTROL (Lineynyye sistemy avtomaticheskogo upravleniya s peremennymi parametrami). Moscow, Fizmatgiz, 1962. 324p. 10,000 copies printed.

BR-SOV/6084
Blokh, Arkadiy Grigor'yevich
FUNDAMENTALS OF HEAT EXCHANGE BY RADIATION (Osnovy teploobmena izlucheniyem). Moscow, Gosenergoizdat, 1962. 330p. 8000 copies printed.

BR-SOV/6086
THERMAL STRESSES IN TURBOMACHINE PARTS; REPORTS OF THE SCIENTIFIC CONFERENCE, NO. 2 (Teplovyye napryazheniya v elementakh turbomashin; doklady nauchnogo soveshehaniya, vyp. 2). Kiyev, izd-vo AN UkrSSR, 1962. 174p. 1800 copies printed.

BR-SOV/6087
Cherkasskiy, Vladimir Mikhaylovich, Tamara Mikhaylovna Romanova, and Rafail Aleksandrovich Kaul'
PUMPS, COMPRESSORS, AND VENTILATORS (Nasosy, kompressory, ventilyatory). Moscow, Gosenergoizdat, 1962. 261p. Errata slip inserted. 15,000 copies printed.

BR-SOV/6089
Klimenko, Aleksandra Petrovich
EXTRACTION OF ETHYLENE FROM PETROLEUM AND GAS (Polucheniye etilena iz nefti i gaza). Moscow, Gostoptekhizdat, 1962. 234p. 4250 copies printed.

BR-SOV/6096
Novatskiy, Vitol'd
PROBLEMS IN THERMOELASTICITY (Voprosy termouprugosti). Moscow, Izd-vo AN SSSR, 1962. 363p. Errata slip inserted. 3,500 copies printed.

BR-SOV/6098
Assonov, V. A., and L. A. Paporotskiy,
NEW DEVELOPMENTS IN BLASTING MEANS AND METHODS (Novoye v sredstvakh i sposobakh vzryvaniya). Moscow, Gosgortekhizdat, 1962. 124p. (Series: Vzryvnoye delo; Sbornik no. 48/5) Errata slip inserted. 3000 copies printed.

BR-SOV/6099
Sedov, Leonid Ivanovich
INTRODUCTION TO THE MECHANICS OF A CONTINUUM (Vvedeniye v mekhaniku sploshnoy sredy). Moscow, Fizmatgiz, 1962. 284p. 8000 copies printed.

BR-SOV/6101
Yeremenko, Valentin Nikiforovich
MULTICOMPONENT TITANIUM ALLOYS (Mnogokomponentnyye splavy titana). Kiyev, Izd-vo AN UkrSSR, 1962. 209p. 2500 copies printed.

BR-SOV/6102
Medvedev, Sergey Vasil'yevich
ENGINEERING SEISMOLOGY (Inzhenernaya seysmologiya). Moscow, Gosstroyizdat, 1962. 283p. 6000 copies printed.

BR-SOV/6103
Gerd, Mariya Aleksandrovna, and Nikolay Nikolayevich Gurovskiy
FIRST COSMONAUTS AND FIRST EXPLORERS OF SPACE (Pervyye kosmonavty i pervyye razvedchiki kosmosa). Moscow, Izd-vo AN SSSR, 1962. 196p. illus., plates. (Seriya: Akademiya nauk SSSR. Nauchno-populyarnaya seriya).

BR-SOV/6104
Kurlyandskaya, S. V., and N. Ts. Stepanyan
OUR COSMIC PATHS (Nashi kosmicheskiye puti). Moscow, Izd-vo "Sovetskaya Rossiya", 1962. 306p. 12,000 copies printed.

BR-SOV/6105
Ivanov, Viktor Mikhaylovich
FUEL EMULSIONS (Toplivnyye emul'sii). Moscow, Izd-vo AN SSSR, 1962. 215p. Errata slip inserted. 1500 copies printed.

BR-SOV/6107
Belyayev, Vasiliy Ivanovich
INVESTIGATION OF THE METAL FATIGUE PROCESS (Issledovaniye protsessa ustalosti metallov). Minsk, Izd-vo MVSS i PO BSSR, 1962. 109p. Errata slip inserted. 2700 copies printed.

BR-SOV/6108
Yurgenson, Aleksey Alekseyevich
NITRIDING IN POWER-PLANT MACHINE BUILDING (Azotirovaniye v energomashinostroyenii). Sverdlovsk, Mashgiz, 1962. 128p. 2800 copies printed.

BR-SOV/6109
Ogibalov, Petr Matveyevich, and Igor' Anatol'yevich Kiyko
BEHAVIOR OF MATERIALS UNDER PRESSURE (Povedeniye veshchestva pod davleniyem). Moscow, Izd-vo Mosk. univ., 1962. 153p. 5000 copies printed.

TRANSLATIONS IN PROCESS

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Mono. Analyticheskaya Khimiya Urana [Moscow] 1962 [430]p.
To be published by IPST.

BULLETIN OF THE CHEMICAL SOCIETY, 1963 [VOL. 28] NOS. 1-10.
[Srpsko] Hemisko Drustvo, Belgrad. Glasnik (Yugoslavia) 1963 [v. 28] nos. 1-10.

[GEOCHEMISTRY OF PETROLEUM AND PETROLIFEROUS DEPOSITS].
Mono. Geokhimiya Nefti i Neftyanykh Mestorozhdenii [Moscow] 1962.
To be published by IPST.

[PASTURES OF UZBEKISTAN].
Mono. Pastbishcha Uzbekistana, Tashkent, 1961.
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PHYSICAL CHEMISTRY OF MOLTEN SALTS AND SLAGS. Symposium of the All-Union Conference in Sverdlovsk, 1960.
Mono. Fizicheskaya Khimiya Rasplavennykh Solei i Shlakov, n.p., 1962, 480p.

STRUCTURE OF SOME URANIUM AND THORIUM ALLOYS. Proceedings of the Baikov Inst. of Metallurgy.
Mono. Stroenie Splavov Kekotornykh Sistem s Uranom i Toriem, Moscow, 1961, 491p.

[STUDIES ON HEAT RESISTANT ALLOYS]. 1962, VOL. 8 and 9; 1963, VOL. 10.
Issledovaniya po Zharoprochnym Splavam (USSR) 1962, v. 9, 9; 1963, v. 10.
To be published by IPST.

[WORKS OF THE HYDROTECHNICAL INSTITUTE "ENG. JAROSLAV CERNI"] 1963 [VOL. 10] NOS. 1-6.
Institut za Vodoprivredu "Jaroslav Cerni". Saopstenja (Yugoslavia) 1963 [v. 10] nos. 1-6.

Akhmatov, A. S.
[MOLECULAR PHYSICS OF BORDER FRICTION].
Mono. Molekulyarnaya Fizika Granichnogo Treniya [Moscow] 1963.
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Arifov, U. O.
INTERACTION OF PARTICLES WITH THE SURFACE OF METALS.
Mono. Vzaimodenstvie Atomnykh Chastits s Poverkhnost'yu Metalla, Tashkent, 1961, 324p.

Batsanov, S. S.
[ELECTRONEGATIVITY OF ELEMENTS AND CHEMICAL BONDS].
Mono. Elektrootritsatel'nost' Elementov i Khimicheskaya Sviaz', Novosibirsk, 1962 [195]p.
To be published by IPST.

Belyaev, V. I.
[INVESTIGATION OF THE METAL FATIGUE PROCESS].
Mono. Issledovanie Protsessa Ustalosti Metallov [Kiev] 1962 [109]p.
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Belyakova, E. E., Reznikov, A. A. and others.
HYDROCHEMICAL METHOD OF PROSPECTING FOR ORE DEPOSITS.
Mono. Gidrokhimicheskii Metod Poiskov Rudnykh Mestorozhdenii, Moscow, 1962, p. 3-267.

Dynkin, E. B.
[MARKOV PROCESSES].
Mono. Markovskie Protsessy, n. p., 1963.
To be published by IPST.

Fridlender, G. O.
INERTIAL NAVIGATION SYSTEMS.
Mono. Inertsial'nye Sistemy Navigatsii, Moscow, 1961, p. 2-154.

Gel'fand, I. M.
[INTEGRAL GEOMETRY AND HARMONIC ANALYSIS ON HOMOGENEOUS SPACES].
Mono. Integral'naya Geometriya i Garmonicheskii Analiz na Odnorodnykh Prostransvakh, n. p., 1962.
To be published by IPST.

Kazhinskii, B. B.
[BIOLOGICAL RADIO COMMUNICATION].
Mono. Biologicheskaya Radiosvyaz' [Kiev] 1962 [166]p.
To be published by IPST.

Khinchin, A. Ya.
[WORKS ON THE MATHEMATICAL THEORY OF MASS SERVICING].
Mono. Raboty po Matematicheskoi Teorii Massovogo Obsluzhivaniya, n. p., 1963.
To be published by IPST.

Klassen-Neklyudova, M. V.
MECHANICAL TWINNING OF CRYSTALS.
Mono. Mekhanicheskoe Dvoinikovanie Kristallov, Moscow, 1960, 261p.
To be published by CB after 3rd quarter 63.

Kupradze, V. D.
[METHODS OF ... POTENTIAL IN THE THEORY OF ELASTICITY].
Mono. Metody Potentsiala v Teorii Uprugosti, n. p., 1963.
To be published by IPST.

Okun', L. B.
[WEAK INTERACTIONS OF ELEMENTARY PARTICLES].
Mono. Slaboe Vzaimodeistvie Elementarnykh Chastits, n. p., 1963.
To be published by IPST.

Palatnik, L. S. and Landau, A. I.
PHASE EQUILIBRIA OF MULTICOMPONENT SYSTEMS.
Mono. Fazovy Ravnovesiya v Miogokomponentnykh Sistemakh, Kharkov, 1961, 405p.
To be published by CB after 4th.quarter 63.

Roitenberg, Ya.
[CERTAIN PROBLEMS IN DYNAMIC PROGRAMMING].
Mono. Nekotorye Zadachi Dinamicheskogo Programmirovaniya, n. p., 1963.
To be published by IPST.

Rozanov, Yu. A.
[STATIONARY OCCASIONAL PROCESSES].
Mono. Statsionarnye Sluchainye Protsessy, n.p., 1963.
To be published by IPST.

Ryvkin, S. M.
[PHOTOELECTRIC PHENOMENA IN SEMICONDUCTORS].
Mono. Fotoelektricheskie Yavleniya v Poluprovodnikakh, n. p., 1963.
To be published by IPST.

Shardakov, V. S.
[WATERING REGULATIONS OF COTTON PLANTS].
Khlopchatnik (USSR) 1960, v. 4, p. 275-332, 663-672.
To be published by IPST.

Sokolova, E. I.
[PHYSIOCHEMICAL INVESTIGATION OF SEDIMENTARY IRON AND MANGANESE ORES AND ENCLOSING ROCKS (OXIDATION-REDUCTION AND BASIC-ACID PROPERTIES OF SEDIMENTARY ORE-BEATING COMPLEXES].
Mono. Fiziko-khimicheskie Issledovaniya Osadochnykh Zhelezhnykh i Margantsevykh Rud i Vmeshchayushchikh Ikh Porod [Moscow] 1962 [214]p.
To be published by IPST.

Starik, I. E.
PRINCIPLES OF RADIOCHEMISTRY.
Mono. Osnovy Radiokhimii, Moscow/Leningrad, 1960, 439p.

Strogonov, B. P.
[PHYSIOLOGICAL FOUNDATIONS OF THE SALT RESISTANCE OF PLANTS, WITH REGARD TO DIFFERENT TYPES OF SOIL SALINATION].
Mono. Fiziologicheskie Osnovy Soleustoichivosti Rastenii, Moscow, 1962, 366p.
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Trokhimchuk, Yu. Yu.
[CONTINUOUS REFLECTION AND CONDITIONS OF MONOGENESIS].
Mono. Nepreryvnye Otobrazheniya i Usloviya Monogennosti, n. p., 1963.
To be published by IPST.

Vinogradov, A. P.
[ISOTOPES OF OXYGEN AND PHOTOSYNTHESIS].
Mono. Izotopy Kisloroda i Fotosintez [Moscow] 1962 [33]p.
To be published by IPST.

Yudin, D. B. and Goldstein, E. G.
[LINEAR PROGRAMMING].
Mono. Lineinoe Programmirovanie, n.p., 1963.
To be published by IPST.

Yur'ev, A. A.
[SHOOTING FOR SPORT].
Mono. Sprotivnaya Strel'ba, Moscow, 1962.
To be published by IPST.

PERIODICALS TRANSLATED COVER-TO-COVER

For basic list of Periodicals Translated Cover-to-Cover see Technical Translations Volume 9 , Number 1.

This basic list is kept up-to-date by giving only changes in the subsequent issues of Technical Translations.

No changes are necessary for this issue.